INFORMAS PROTOCOL

Labelling Module

Monitoring health-related labelling and promotional characters/premium offers on foods and non-alcoholic beverages in retail outlets

The University of Auckland

2015

(Updated November 2017)

Stefanie Vandevijvere

INFORMAS

Benchmarking food environments

Contact

Dr Mike Rayner

Nuffield Department of Population Health

University of Oxford

United Kingdom

mike.rayner@dph.ox.ac.uk

Dr Stefanie Vandevijvere

s.vandevijvere@auckland.ac.nz

Terms and conditions

Use of this protocol is subject to terms and conditions. Please refer to ***Annex 1*** for these terms and conditions.

Contents

Abbreviations

CHO	Carbohydrates
DIG	Daily Intake Guide
FoP	Front-of-pack
FSANZ	Food Standards Australia New Zealand
FSC	Food Standards Code
GDA	Guideline Daily Amounts
GF	Gluten Free
GI	Glycaemic index
HSR	Health Star Rating
INFORMAS	International Network for Food and Obesity / NCDs Research, Monitoring and Action Support
MPI	Ministry for Primary Industries
MTL	Multiple Traffic Light
NCD	Non-communicable disease
NHF	National Heart Foundation
NIP	Nutrition information panel
NPSC	Nutrient Profiling Scoring Criterion
SNI	Supplementary Nutrition Information

Background

Introduction

In response to the rising rates of obesity and diet-related non-communicable diseases (NCDs), some prevention strategies are focusing attention on improvement of food labelling policies and practices [1, 2]. When consumers purchase foods, they may gather information regarding food characteristics from various sources, including from family knowledge, education, media and advertising as well as from information found on the food product label itself [3]. A 2007 Food Standards Australia New Zealand (FSANZ) survey showed 84% of Australians and 81% of New Zealanders mentioned food labels as their primary source of information regarding nutritional information of foods [4]. Nutrient declarations e.g. Nutrition Information Panels (NIP), and health and nutrition claims, appear on products to provide consumers with information regarding the nutrient content and health benefits of packaged food products and may influence consumers food choices and purchasing behaviour [5-7]. Nutrition labels deliver (quantitative) information regarding the nutritional composition of a food, whereas nutrition and health claims provide information related to the nutritional and health benefits of a specific food or nutrients usually by linking a food, a food component or a nutrient to a desired health benefit [3, 8].

Increasingly food labelling is found in many different places, including food retail outlets, quick service/fast food and other types of restaurants, and school and workplace cafeterias. Also some food company websites have been found to provide information on food labelling and claims on their products. This protocol will however focus on the health-related labelling of packaged food and non-alcoholic beverage products in retail outlets.

The Codex Alimentarius Commission (Codex) defines food labelling as “any written, printed or graphic matter that is present on the label, accompanies the food, or is displayed near the food, including that for the purpose of promoting its sale or disposal” [9]. Most components of food labelling are voluntarily presented by food manufacturers or retailers, however it is mandatory in many jurisdictions to display some elements, such as lists of ingredients and nutrient declaration, and others are subject to regulation, such as nutrition and health claims or front-of-pack (FoP) labelling [1]. It has been reported that more than 90% of New Zealand consumers at some point check the nutrition information on packaged foods and 48% of New Zealanders reported to refer to labelling information for newly purchased product always or almost every time [4, 8]. Food purchasing decisions can be made easier for consumers by including supplementary front-of-pack (FoP) nutrition labels on packaged foods [5].

Food labelling components and regulations

Regulations are in place in quite a few countries on food labelling, mainly related to provision of ingredient lists, nutrient declarations and nutrition and health claims.

Nutrient declarations

In many countries, including Australia, New Zealand, Europe and the USA, by law producers are required to provide a nutrient list on packaged food products (with some exceptions), even in the absence of nutrition or health claims. The rules define which nutrients must be listed and on what basis e.g. per 100g/per serving [10]. In 2011, the EU Regulation 1169/2011 was accepted on the "Provision of Food Information to Consumers" which requires a list of the nutrient content of most packaged foods to be provided on the back of the pack starting from 2016 [11]. In contrast, in Switzerland, nutrient content labelling for products is only mandatory when nutrition or health claims are present on the package or when food products are sold to the EU, however most manufacturers voluntarily already put the nutrient content on the label of their food products [10].

Other countries, such Argentina, Brazil and Canada have specific mandatory labelling requirements for trans-fats [10]. Since 1993, national legislation regarding the compulsory use of warning labels on high-salt foods has been in place in Finland and is applied to all the food categories that contribute most to the salt intake of the Finnish population [10, 12]. In Chile, the government approved a Law of Nutritional Composition of Food and Advertising (Ley 20, 606) in 2012, which was implemented in June 2016. The framework legislation aims to: define the limits of energy, saturated fats, sugar and sodium content to be considered “in excess" in different foods; enable the use of a warning message and a graphic design on food labels to communicate the “excess”; and restrict advertising directed to children under 14 years ages for foods in the “excess” category (seen as “R”) [10].

Nutrition and health claims on food products

Nutrition and health claims are used on food packaging by the food industry to inform consumers of a health benefit that a product may have. Many different claims are used, such as ‘this will boost your immune system’ or ‘lowers cholesterol’ or even very simple claims such as ‘low in fat’ are common in a wide range of food categories [13]. Different countries have implemented regulations to protect consumers from being misled by such claims and to ensure consumers receive accurate information on the composition of products bearing a claim. The European Regulation (EC) No. 1924/2006 on nutrition and health claims was published in December 2006 and categorises claims as either ‘nutrition claims’ or ‘health claims’. The scope of EU Regulation 1924/2006 is broad, so that the use of wording and symbols (including trademarks) which imply that a food provides a particular nutrition or health benefit are all included as claims and subject to the new rules.

Claims made on foods must be sufficiently clear so that an average consumer can understand them and claims are not permitted if they are lacking adequate scientific evidence [13, 14].

In New Zealand and Australia, nutrition and health claims are regulated by the Australia New Zealand Food Standards Code (FSC) and implemented by the Ministry for Primary Industries (MPI) in New Zealand [15, 16]. In accordance with the FSC, it is mandatory in Australia and New Zealand to display a NIP on most packaged foods (displaying energy, protein, total fat, saturated fat, carbohydrate, sugars, and sodium per serving, and per 100 g or 100 mL) and if nutrition claims are made, the nutrition information for that nutrient must be displayed on the NIP. A new mandatory food standard (Standard 1.2.7) was passed in January 2013 on the regulation of nutrition and health claims on food labels and in advertisements by the Food Standards Australia New Zealand (FSANZ), which all food companies must comply with from 18 January 2016 [15]. This standard aims to reduce false and misleading nutrition claims and ensure that claims are only present on foods meeting certain 'healthy' criteria [15]. According to the new food standard code regulating nutrition and health claims on food labels and in advertisements in New Zealand, health claims cannot be used on products classified as 'less healthy' according to the NPSC. However, there are no generalized nutritional criteria that restrict the use of nutrition claims on 'less healthy' foods.

Front-of-pack nutrition icons/logos on products with relatively favourable product compositions or individual logos/icons that relate to a particular issue (e.g., glycaemic index (GI), heart health) have been introduced in some countries to help consumers make healthier choices. Some are licence-based such as the GI symbol and the Heart Foundation Tick (HF Tick) which existed in New Zealand [17-19] and Australia[20] until recently. Under the new and standardized INFORMAS taxonomy for the classification of health-related labelling components (introduced under 'methods' in this protocol), these are considered as symbolic claims rather than supplementary nutrition information [1]. Similarly a heart symbol system was introduced in 2000 by the Finnish Heart Foundation and the Finnish Diabetes Foundation. The heart symbol indicates that a product is a better choice in regards to sodium content compared to another product in the same food category. The heart symbol system is acknowledged by the Finnish national authorities, and the National Nutrition Council recommends consumers to use products bearing the heart symbol [10]. Norway, Sweden, Denmark and Iceland have introduced the Nordic keyhole logo and Belgium, Czech Republic, the Netherlands and Poland have introduced The Choices Logo [10]. These are voluntary, industry-initiated schemes. The logo identifies healthier options in each food group. Products must meet nutritional criteria set by an independent scientific committee.

Not only do all these different labelling components differ by appearance, but also the regulations for their use are different in each country.

Existing supplementary nutrition information labelling systems

Currently various industry and agency-initiated labelling systems operate, which can be interpretive or non-interpretive, for example, the Australian Food and Grocery Council's multi-icon Daily Intake Guide (DIG) system was launched in 2006, developed by the New Zealand Food & Grocery Council (NZFGC) and the AFGC in collaboration with the food industry, based on the FSC, to provide information on energy and nutrient content and their contribution to a person's daily intake [15]. Approximately 500 products currently display the DIG thumbnails in New Zealand, however display of percentage dietary intake (DI) information is only mandatory for energy intake, while the use of additional percentage DI information (fat, protein, saturated fat, carbohydrate, sugars and sodium) is voluntary [15].

Interpretative, consumer-oriented front-of-pack (FoP) nutrition labels (e.g., traffic light labelling system, health star ratings) have been introduced and implemented in some countries , mainly Australia, New Zealand, the UK and Ecuador, to help consumers identify healthier food options [10, 21]. Australia and New Zealand introduced the voluntary implementation of the health star rating system [21, 22] and in the UK and Ecuador, the Multiple Traffic Light (MTL) labelling system has been implemented (voluntary in the UK, mandatory in Ecuador) [23].

The FoP health star rating labels use a five star scale to reflect the nutritional value of the food product. The system uses a star rating scale of ½ to 5 stars where ½ would indicate least healthy to 5 as most healthy. The system takes into account four aspects of a food's composition associated with increasing the risk factors for chronic diseases (energy, saturated fat, sodium and total sugars) along with certain 'positive' aspects of a food, such as fruit and vegetable content, and in some instances dietary fibre and protein content [10, 24]. The implementation of the HSR system is overseen by a Health Star Rating Advisory Group.

The traffic light labelling system requires packaged foods to carry a "traffic light" label in which the levels of fats, sugar and salt are indicated by red (high), medium (orange) or low (green) [23].

Promotional characters and premium offers on food packages

Children and adolescents might be exposed to food marketing through a diverse range of media. Tools and methods to monitor food marketing are incorporated in separate INFORMAS protocols. Promotional characters, licensed or spokes characters, on-pack nutrient content claims and sport celebrity endorsements on food packages are an attractive lure for advertising to children [25, 26] and have been reported to influence young children's taste, food preferences and purchases compared to the same products

without such characters [26-29]. This protocol, assessing health related labelling components on packaged foods, includes the methods for monitoring of these promotional characters on food packages as well, since sampling of outlets and foods, and data collection methods are similar. It has to be noted however, that promotional characters or premium offers, are not to be considered health-related labelling components.

INFORMAS taxonomy for health-related food labelling and its components

The International Network for Food and Obesity / NCD Research, Monitoring and Action Support (INFORMAS) is a global network of public-interest organisations and researchers that aims to monitor, benchmark and support public and private sector actions to create healthy food environments and reduce obesity, diet-related NCDs and their related inequalities. The food labelling module of INFORMAS seeks to monitor food labelling globally, and aims to answer the research question, "What health-related labelling is present on foods and non-alcoholic beverages?"

The proposed INFORMAS taxonomy for classifying the health-related labelling components on packaged foods was developed by Rayner and colleagues based on the Codex food labelling standards and guidelines [1]. A general overview of the proposed taxonomy is shown in Figure 1.

The monitoring of labelling on packaged foods involves the recording of the presence/absence and other aspects of the lists of ingredients (e.g. whether quantitative or not), nutrient declarations, supplementary nutrition information (SNI), all claims (nutrition claims, health claims and other claims), but excluding other non-health-related labelling information e.g. date marking, country of origin. The INFORMAS taxonomy doesn't take into account whether the labelling is mandatory or voluntary, but that information can easily be derived from existing legislation in countries applying the taxonomy. [1].

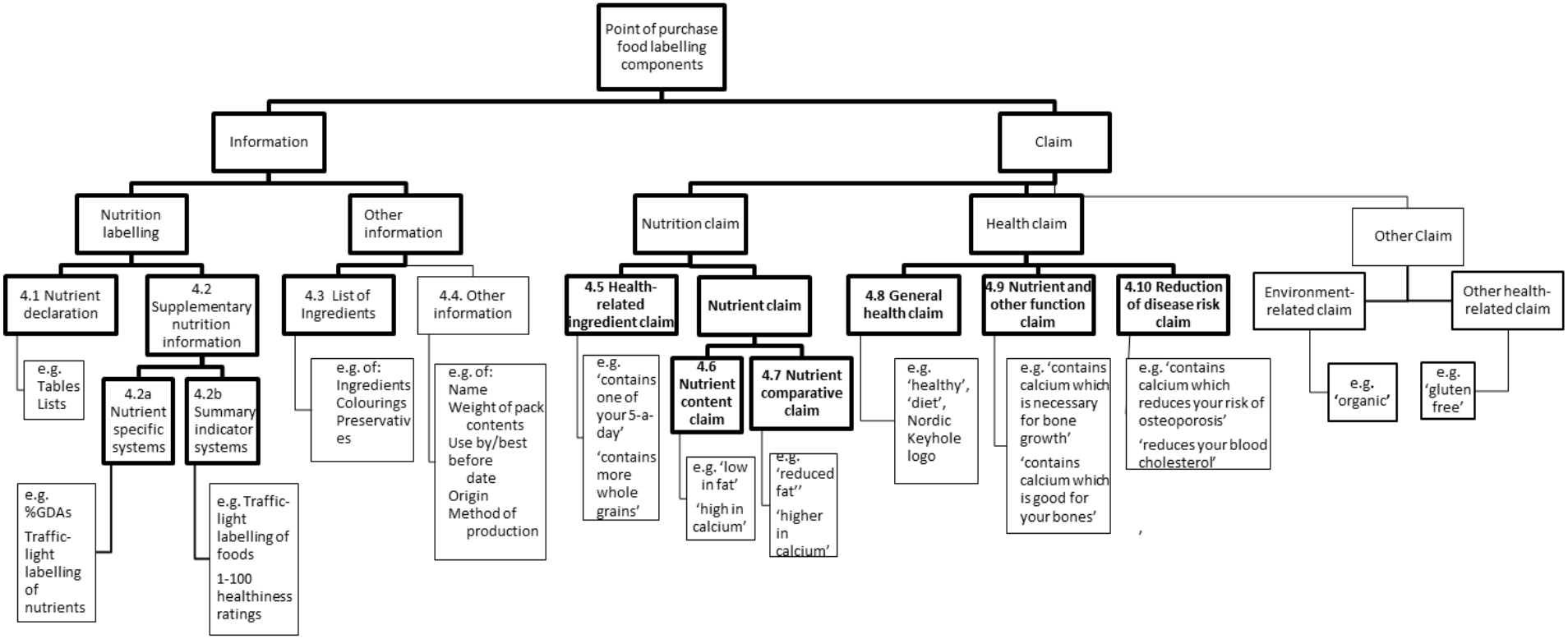

Figure 1: INFORMAS Taxonomy for the classification of health-related food labelling components in a standardized way across countries and over time

The last layer is not a part of the taxonomy. It just provides examples of the component above. NB health-related endorsements of foods or ticks on foods (by government agencies, heart foundations, etc.) are classified according to their implied claim. They are classified as claims and not as FoP labelling since they imply that a relationship exists between a food or a constituent of that food and health, rather than intended to increase the consumers' understanding of the nutritional value of their food.

In the INFORMAS taxonomy, nutrition information is classified into:

- Nutrient declarations
- Supplementary nutrition information (e.g. % guideline daily amounts (GDAs), traffic lights, health star ratings or other FoP labelling systems)
- List of ingredients
- Other non-health-related information (e.g. origin, brand name).

The INFORMAS taxonomy divides claims into 3 major categories, which are further classified into sub categories (see section on classification and coding of labelling components of sampled foods for more detail):

1. **Nutrition claims**
    - Health related ingredient claim
    - Nutrient claim
        - Nutrient content claim
        - Nutrient comparative claim

2. **Health claims**
    - General health claim
    - Nutrient and other function claim
    - Reduction of disease risk claim

3. **Other claims**
    - Other health-related claim
    - Environment-related claim

The format of each single claim is classified into one of the following three categories:

- Numerical
- Verbal
- Symbolic

Although not part of the INFORMAS taxonomy on health related labelling on food products, but rather part of food promotion, premium offers and promotional characters on food packages are also considered in this protocol (see section on classification and coding of labelling components of sampled foods for more detail). This is due to the fact that sampling and data collection procedures are similar. Promotional characters are classified into:

1. Cartoon/Company-owned character, e.g. M&Ms
2. Licenced character, e.g. Dora the explorer
3. Amateur sportsperson, e.g. person playing a sport

4. Famous sportsperson/team, e.g. All Blacks (Rugby team NZ)
5. Celebrity/famous (non-sports) figure, e.g. Jamie Oliver
6. Movie tie-in, e.g. Shreck
7. Non-sports/historical events/festivals, e.g. Christmas, ANZAC day
8. 'For kids' e.g. image of a child, e.g. 'great for school lunches'
9. Awards, e.g. Best Food Award 2014, award winning
10. Sports event, e.g. Rugby World Cup

Premium offers are classified into:

1= Game and app downloads
2= Contests
3= Pay 2 take 3 or other
4= 20% extra or other
5= Limited edition
6= Social charity
7= Gift or collectable
8= Price discount
9= Loyalty programs

Objectives

The aim of this protocol is to monitor health-related labelling components and promotional characters and premium offers on packaged foods and non-alcohol beverages sold in major food outlets (mainly supermarkets). The monitoring of health-related food labelling in quick service/fast food restaurants and other food service environments and other types of in-store health-related information other than that on food packaging (e.g. shelf tags, posters near foods) in retail settings, is not included in this protocol.

A step-wise approach has been developed for selection of retail outlets and selection of food categories, and for data collection methods, and will be used in different countries depending on the resources available [1]. The monitoring of health related labelling and promotional characters/premium offers on food products in countries will likely differ in the way the retail outlets and food categories are selected.

The INFORMAS taxonomy has been developed to standardise the classification of the different health-related labelling components and promotional characters present on food packages. In conjunction with this, country-specific classification systems (mainly for the classification of health and nutrition claims) can be used in addition to verify compliance of health related labelling on food packages with national regulations.

Aims

Aim 1: To investigate the health-related labelling of 'healthy' and 'less healthy' packaged food products sold in major retail outlets

Aim 2: To investigate the presence and power of promotional characters and premium offers on 'healthy' and 'less healthy' packaged food products sold in major retail outlets.

Specific objectives:

1. To monitor the use of different types of nutrition information (nutrient declarations, supplementary nutrition information and list of ingredients) on packaged foods, on different packaged food categories, and on healthy versus less healthy packaged foods.
2. To monitor the use of different types of nutrition and health claims on packaged foods, on different packaged food categories, and on 'healthy' versus 'less healthy' packaged foods.
3. To monitor the extent and nature of promotional characters and premium offers on packaged foods, on different packaged food categories, and on 'healthy' versus 'less healthy' packaged foods.

Methods

Sampling of areas/regions

Sampling of areas/regions is not considered to be important for the labelling module, since this module aims to capture all the **different** packaged food products available for sale in the major retail outlets in the country, and not **all** the packaged food products available for sale in the major retail outlets in the country. It is however important to identify whether certain major retail chains are only available in certain parts of the country, and not in others (e.g. in different states the major chains may vary).

Sampling of food outlets

Retail outlets should be selected from the major chains (in terms of numbers of foods sold there, % market share, etc.). Within each of the major chains, the biggest retail outlet should be selected for data collection (Table 1). It is dependent on the country how many different major chains will need to be selected; however countries need to ensure that the majority of the different packaged foods are captured from the country's food supply.

Selection of food categories

Only packaged foods will be included in the sample of foods. However, if unpackaged foods are not included, then many healthy foods, such as fresh fruit and vegetables, will not be

captured and this may result in the sample of foods containing a higher proportion of 'less healthy' foods than the proportion of 'less healthy' foods among all the different foods supplied in the major retail outlet chains. Therefore, an important additional indicator to collect is the percentage of packaged foods in the whole food supply (or the outlets under study) in the country. In developing countries, the percentage of packaged foods in the food supply may still be substantially smaller than in developed countries.

Preferably, the sampling frame (denominator) should include all different packaged foods available/for sale in the country (optimal approach), however dependent on the available budget, it could also for example include all different packaged foods from particular food categories (e.g. biscuits, breakfast cereals, non-alcoholic beverages), all different packaged foods sold by just one retail chain, all different packaged foods of particular food categories sold by one retailing chain(minimal approach). The minimal approach ideally will include the food categories clearly related to reducing or increasing the rates of obesity and diet-related NCDs (relevant to INFORMAS' objectives), e.g. fruits and vegetable products (canned, frozen etc.), non-alcoholic beverages, snack foods etc. [1]. The denominator for the expanded approach will be all different packaged foods for sale in the largest retail outlet of each of the major retail chains in the particular country.

Table 1: The INFORMAS step-wise approach to sampling retail outlets and foods

Monitoring aspect	'Minimal' monitoring	'Expanded' monitoring	'Optimal' monitoring
Selection of retail outlets	• From one type of retail outlet (e.g. supermarkets) in the jurisdiction	• From different types of retail outlets in the jurisdiction	• From all different types of retail outlets in the jurisdiction
Selection of food groups	• From specific packaged food categories related to obesity and diet-related NCDs	• From all packaged food categories	• From all packaged food categories (+ derive indicator on % of different packaged foods from all different foods in the country's food supply)

The food group categories and subcategories will be used from the system used by the Global Food Monitoring Group coordinated by the George Institute for Global Health (see example in Table 2).

This food group classification system has already been used by a range of different countries globally. In Table 2, the categories clearly related to increasing or decreasing rates of obesity and diet-related NCDs, for inclusion in the minimal approach, have been highlighted with an asterix (*).

Sampling of food outlets and food categories in New Zealand

Four major supermarket chains in Auckland (1 outlet from each chain) are chosen as sites for data collection (Countdown, PaknSave, New World and Four Square), as these are the major chains according to market share data in New Zealand.

Sampling of foods

Countries should include all the different packaged foods within the particular selected food categories and retail chains for coding the labelling components and promotional characters/premium offers. It has been estimated, based on experience in New Zealand, that on average 300 different food products can be coded during one day.

Table 2: Food group classification system of the Global Food Monitoring Group

Food group Code 1	Food group Code 2	Food group Code 3
1 Confectionery		
	1 Chewing gum	
	2 Chocolates and sweets*	
		1 Sugar-based
		2 Chocolate-based confectionery
		3 Sugar-free sweets
	3 Jelly	
	4 Cough lollies	
2 Convenience foods		
	1 Meal kits*	
	2 Other frozen foods**	
	3 Pizza*	
	4 Pre-prepared salads and sandwiches*	
	5 Ready meals*	
	6 Soup*	
3 Bread and bakery products		
	1 Biscuits*	
		1 Sweet unfilled biscuits
		2 Plain dry biscuits
		3 Savoury biscuits
		4 Sweet filled biscuits

Food group Code 1	Food group Code 2	Food group Code 3
		5 Gluten-free sweet biscuits
	2 Bread*	
	3 Cakes, muffins and pastries*	
4 Cereal and cereal products		
	1 Breakfast cereals*	
	2 Cereal bars*	
	3 Couscous	
	4 Noodles	
	5 Pasta	
	6 Rice	
	7 Unprocessed cereal	
5 Dairy*		
	1 Ice cream and edible ices	
	2 Milk	
	3 Desserts	
	4 Cheese	
	5 Yoghurt and yoghurt drinks	
	6 Cream	
6 Edible oils and oil emulsions		
	1Cooking oil spray	
	2 Cooking oils*	
	3 Edible oils*	
	4 Coconut oil	
7 Eggs		
8 Fruit and vegetables		
	1 Fruits*	
	2 Herbs and spices	
	3 Jams and Marmalades	
	4 Nuts and seeds	
	5 Vegetables*	
9 Sauces and spreads		
	1 Sauces	
	2 Spreads	
	3 Mayonnaise and salad dressings	
10 Snack foods*		
	1 Crisps and snacks	
11 Fish and Seafood products		
12 Processed fish	1 Canned fish	
	2 Chilled fish	
	3 Chilled seafood	
	4 Frozen fish	
	5 Frozen seafood	
	6 Marinated mussels	
	7 Canned seafood	
	8 Other fish	

Food group Code 1	Food group Code 2	Food group Code 3
13 Special foods		
	1 Protein and diet bars	
	2 Baby foods	
	3 Diet soup mixes (meal replacements)	
	4 Breakfast beverages*	
	5 Diet drink mixes	
	6 Protein powders	
	7 Sports gels	
	8 Other fitness and diet products	
14 Meat and meat products		
Meat alternatives		
	1 Meat-free bacon	
	2 Meat-free products	
	3 Tofu	
Processed meat		
	1 Sliced meat (excluding salami and other cured meat)	
	2 Meat burgers*	
	3 Raw flavoured meats	
	4 Raw unflavoured meats	
	5 Bacon	
	6 Roast chicken	
	7 Frozen meat	
	8 Sausages and hotdogs*	
	9 Dried meat	
	10 Canned meat	
	11 Other meat products	
	12 Pate and meat spreads	
	13 Salami and cured meats	
	14 Whole hams and similar products	
15 Sugar, honey and related products		
	1 Condensed caramel	
	2 Dessert additions	
	3 Dessert toppings	
	4 Honey	
	5 Icing**	
	6 Other sugar-based products*	
	7 Sugar	
	8 Sweeteners	
	9 Syrup	
16 Non-alcoholic beverages (powdered and liquid)		
	1 Coffee and tea	
	2 Beverage mixes*	

Food group Code 1	Food group Code 2	Food group Code 3
	3 Cordials*	
	4 Electrolyte drinks*	
	5 Energy drinks*	
	6 Fruit and vegetable juices*	
	7 Soft drinks*	
	8 Waters *	
17 Unable to be categorised		
18 Vitamins and supplements		
19 Alcohol		

* Categories related to increasing or decreasing rates of obesity and diet-related NCDs (for selection as part of the minimal approach)

** Category only in the Nutritrack database (New Zealand food composition database for packaged foods) and not in the Global Food Monitoring Group database

Data Collection

Data collection methods may vary by country. There are three basic methods of collecting food labelling data from food packaging:
The recommended option is method 1.

1. Photographing the food packet (all sides recommended) e.g. in through a smartphone that scans the barcodes and takes pictures of the food product.
2. Purchasing the products for extracting food labelling information later.
3. Recording food labelling information in store using a data collection form.

Methods 1 or 3 may require permission prior to data collection from the retail outlets; this may also vary by country. Method 2 may require significantly more resources than methods 1 and 3 for extracting data from food packaging. When photographing the food packet or recording the labelling information in-store, either all sides of the package might be taken (expanded and optimal approach) or only the front-of-pack and the ingredient list and NIP (minimal approach). It is however strongly recommended to photograph all sides of the food products to be able to capture nutrition and health claims appearing on sides and back of packages as well.

A stepwise approach to data collection of food labelling components and promotional characters on packaged foods is outlined in Table 3.

Seasonal variability

Seasonal variability may be considered (optimal approach), although this may be more applicable to fresh produce and it would be ok to assess labelling information on products during the same season each time monitoring is done. It is recommended that the data

collection period should exclude special events, or religious occasions, during which the food labelling components might vary considerably e.g. Christmas, Easter etc.

Composition data of packaged foods

In order to be able to classify products as 'healthy' and 'less healthy' by a common nutrient profiling system centrally, information on composition of packaged foods needs to be collected, alongside the information on labelling. This information should include data on energy, protein, total fat, saturated fat, carbohydrates (CHO), sugar, fibre (when present) and sodium and the serving size (per 100g). If information is available from the ingredient list on fruit and vegetable content, then that information should be captured as well since some of the nutrient profiling systems take this into account (e.g. Nutrient Profiling Scoring Criterion Australia New Zealand, Health Star Rating Australia and New Zealand).

Step-wise approach to data collection

Minimal approach

For the minimal approach, basic data collection of food labelling components will be included, such as the presence/absence of product information; lists of ingredients, nutrient declarations, supplementary nutrition information etc. (see Table 3). In relation to health and nutrition claims, the 'minimal' level of monitoring should capture claims that refer to NCDs or health conditions related to NCDs (such as obesity). As recommended by Codex for mandatory declaration within nutrient declarations, the minimal approach should include labelling components which refer to energy, protein, available carbohydrate (i.e. total carbohydrate excluding fibre), total sugars, fat, saturated fat, and sodium (or the amount of sodium in salt equivalents as "salt") [9]. Although some of these nutrients are more relevant to NCD prevention than others, for completeness, it is recommended that at a minimum monitoring information should be collected relating to all these seven nutrients [1].

In addition, 'minimal' monitoring should include labelling information that relates to fruit and vegetable content with the most common type of fruit and vegetable labelling being health-related ingredient claim as shown in Table 4. The presence or absence of supplementary nutrition information should be part of 'minimal' monitoring as it is easy to collect. It is proposed that composition data for the foods that do or do not bear particular forms of labelling will also be necessary for minimal monitoring, and will be necessary, for example, for assessing whether nutrition claims are in line with Codex standards [1]. For the minimal approach, it is also proposed that the presence or absence of promotional characters and premium offers should be collected for the food packages selected. The placement of claims and promotional characters on the food package is important. While they are predominantly found on FoP, other sides and back of pack may also carry claims and promotional characters and/or premium. For the minimal approach, claims and promotional characters can be analysed for FoP only (although it is recommended to

analyse them on all sides) and for expanded and optimal approach on all sides of the package.

Expanded and optimal approach

For the 'expanded' level of monitoring, data collection will be more detailed and include non-priority nutrients as well (Table 4). Other nutrients to consider include polyunsaturated fatty acids, fibre, minerals and vitamins, which do play a role in the maintenance and promotion of health and yet are not so crucial in causing or protecting against NCDs. [1]. Some aspects of format are relatively easy to define; whilst others are less easy. For instance, the presence or absence of traffic-light colours in supplementary nutrition information is relatively easy to score and should be part of 'minimal' monitoring, but the various wordings of some types of health and nutrition claims are difficult to classify and therefore a coding system has been developed for the content of different types of claims as part of the expanded and optimal approach (Table 3) [1]. The type of promotional characters should be collected for the expanded and optimal approach.

Table 3: Step-wise approach to data collection

Food Labelling Component	'Minimal' monitoring	'Expanded' monitoring	'Optimal' monitoring
Product Information	•Product name •Product composition data for priority nutrients •Recommended serving size	•Manufacturer information •Product composition data for non-priority nutrients	Same as expanded
Lists of ingredients	•Presence or absence •Presence or absence of QUID * for priority ingredients (fruit or vegetable)	•Whether QUID* for: all, most or characterising** ingredient(s).	Same as expanded
Nutrient declarations	•Presence or absence •Presence of declarations for priority nutrients	•Format (whether list or table, whether % reference intakes, etc.) •Presence of declarations for non-priority nutrients	Same as expanded
Supplementary nutrition information by: *a) Nutrient specific systems* *b) Summary indicator systems*	•Presence or absence •Format (whether % reference intakes, Health Star Rating etc.) •Presence of declarations for priority nutrients***	•Presence of declarations for non- priority nutrients*** •Reference quantity(s) for declarations***	Same as expanded + position on packaging
Placement of claims on package	•Front of pack (if images for other sides of the package are not available)	• All sides of package	Same as expanded

Food Labelling Component	'Minimal' monitoring	'Expanded' monitoring	'Optimal' monitoring
Nutrition claims by: *a) Health-related ingredient claims* *b) Nutrient content claims* *c) Nutrient comparative claims*	• Presence of claims for priority nutrients or ingredients	• Presence of claims for non-priority nutrients • Format of claims (whether verbal, numerical, symbolic, etc.)	Same as expanded
Health claims by: *a) Nutrient and other function claims* *b) Reduction of disease risk claims* *c) General health claims*	• Presence of claims for NCDs and health conditions related to NCDs	• Presence of claims for other diseases and health conditions • Format of claims (whether verbal, numerical, symbolic, etc.)	Same as expanded
Other contextual information	• Food labelling legislation and voluntary guidelines		Same as expanded
Promotional characters	• Presence and type of promotional characters	Presence of types of promotional characters	Position of promotional characters

* QUID: Quantitative ingredient declaration

** Characterising ingredient: 'where the ingredient or category of ingredients is essential to characterise a food and to distinguish it from products with which it might be confused because of its name or appearance' (47)

*** Not necessarily to be ascertained from the packaging alone for certain formats

Table 4: International Network for Food and Obesity / Non-communicable Disease Research, Monitoring and Action Support (INFORMAS) lists of prioritised nutrients and other food components [1].

INFORMAS food labelling monitoring: 'minimal' monitoring (priority nutrients)	INFORMAS food labelling monitoring: 'expanded' and 'optimal' monitoring (additional nutrients)
• Energy	
• Total fat • Saturated fat • Trans fats • Protein • Total carbohydrate • Total sugars • Free sugars • Sodium	• Polyunsaturated fat • n-6 polyunsaturated fatty acids • n-3 polyunsaturated fatty acids • Monounsaturated fat • Cholesterol • Dietary fibre • Non-starch polysaccharides
• Fruit and vegetables	

Data collection in New Zealand

The already existing Nutritrack database is used to monitor food labelling components and promotional characters of packaged food products. Nutritrack is a food composition database that contains nutrient information and pictures of packaging for processed foods widely available for sale in NZ supermarkets (Countdown, PaknSave, New World and Four Square in Auckland) [5, 30]. All the packaged foods for sale in the selected outlets are included for data collection (n=~14000). Where the same product is sold in more than one supermarket, that product is included only once in the product sample. Photos are taken of front, side and back of all packaged food and beverage products, however the database does not capture the other sides entirely, therefore only the FoP can be coded in NZ. Every year photos of products from major supermarkets are collected to update the existing list. Products are always collected from supermarkets in the same order to previous years so that 'like with like' can be compared across years. [5].

Supermarket data (photos) are entered directly into a smartphone in the supermarket. Photo and nutrient data from the NIP are manually entered into the Nutritrack supermarket database. For each product the company name, product name, date scanned and barcode are recorded. Nutrition labelling information recorded includes the National Heart Foundation (NHF) Tick, Daily intake guide (DIG), packet size, packet unit, serving size, serving unit and per 100g content of energy, protein, total fat, saturated fat, carbohydrates (CHO), sugar, fibre (only when present) and sodium. Product information including which products contain the Heart Foundation Tick and DIG labelling for each food group category can be exported to an Excel spreadsheet (Microsoft Excel 2010) including the product barcode. The coding of claims only considers those in English (e.g. in Maori is excluded).

Data Collection in Chile

A standardised protocol and food categorization system was used to guide photo collection and the data management of photos taken between February and April 2015 [31]. Data collection was conducted in eleven supermarkets, consisting of five different supermarket chains encompassing high and lower middle income neighbourhoods in Santiago, Chile. Photos (n= ~50,000) from nearly 10,000 unique food products were used. See ***Annex 3***.

Classification and coding of health-related labelling components of sampled packaged food products

Nutrition information and claims present on food packages will be classified according to the INFORMAS taxonomy, as already presented in Figure 1.

Definitions and rules for coding nutrition claims, health claims and 'other' claims (and sub-types) using the INFORMAS taxonomy

All the types of claims, their definitions, classification rules and some examples (non-exhaustive) are shown below.

Overarching rules:

- Brand name, product name and slogans on food products should be included when classifying claims in case they refer to the product being healthy or having specific nutritional properties, e.g. Optihealth

- In some countries, for the minimal approach, only the FoP may be analysed. It is recommended however to include the whole package of the foods sampled. The side of the package to be considered as the FoP needs to be determined e.g. yoghurt packs or ice cream packages sometimes have the top or side as FoP (check company website if possible). For products in a carton (e.g. milk) the roof will also be included as FoP.

- For multipacks with a lid going across several items e.g. 6 pack yoghurt, only the top of the lid should be included and individual punnet's FoP will be excluded. For multipacks with several individual packs visible, e.g. multipack milk cartons, all visible claims across the product will be included.

<u>Claims stating 'good'</u>

Good has an ambiguous meaning, as it could imply healthiness, quality or taste.

- <u>'Ingredient + good'</u> will be classified as a 'health-related ingredient claim'. The word 'good' should specifically be describing an ingredient and imply it is good in relation to health. e.g. 'berry good'.
- The word 'good' used in general terms to describe the overall goodness of the product where no ingredient is specifically described will be classified as 'general health claim' such as 'full of good stuff' and 'so good'.
- The use of 'good' to describe the taste or quality of the product is not considered as a health-related claim, e.g. 'good taste' and 'good quality'.

<u>Multiple claims</u>

- If a product states 2 claims in one sentence or phrase this must be taken as 2 separate claims. For example. '7 grains and 7 seeds' should be taken as two health-related ingredient claims
- All repetitions of the same claim will be included e.g. fibre mentioned 5 times on the package will be included as 5 claims of the same type (nutrient content claim).
- When one single claim may be classified as more than one type of claim, the hierarchy will first consider **health claim> nutrient content or nutrient comparative claim> health-related ingredient claim> other claim.**

Examples of using the hierarchy for the types of claims:

- ‘soluble fibre helps lower cholesterol reabsorption’ = reduction of disease risk claim (health claim) > nutrient content claim
- ‘fibre helps reduce digestive transit time and promotes regularity’ = nutrient AND digestive function claim (health claim) > nutrient content claim
- Lactose, although a disaccharide sugar (nutrient content claim), will be an exception, as it will be classified as ‘other health related claim’ (other claim), as it is similar to gluten free claim which is aimed for those with a specific intolerance/allergy condition.

Nutrition Claims

‘Any representation which **states, suggests or implies** that a food has particular nutritional properties including but not limited to the energy value and to the content of protein, fat and carbohydrates, as well as the content of vitamins and minerals’ (CAC/GL 23-1997) [32].

The following do not constitute nutrition claims [9]:

(a) The mention of substances in the list of ingredients;

(b) The mention of nutrients as a mandatory part of nutrition labelling;

(c) Quantitative or qualitative declaration of certain nutrients or ingredients on the label if required by national legislation.

Although energy and some antioxidants are not generally considered nutrients, claims related to energy and antioxidants are classified as a nutrient content or comparative claim for the purpose of INFORMAS. ‘Energy’ is a nutrient when it is the subject of a claim (e.g. ‘source of energy’ or ‘lower in calories’) and when it refers to energy content of the food rather than energy of the person. Words or phrases stating, implying or suggesting the claim is related to energy of the person, are categorised as general health claims, e.g. energising/energise, optimum power, maximum charge, fuel, ‘revitalise’, ‘sustaining’, ‘invigorating’, and ‘replenishing’ etc.

Rules:

Numerical claims

- If a 'healthy' ingredient specifies a number or percentage, then it will be considered as a health-related ingredient claim, otherwise it will not be considered a claim, but merely describing the product and/or its contents.
- When an overall number or percentage is given for more than one ingredient e.g. '70% nuts, seeds and fruit' it will be taken as 3 health-related ingredient claims.

Health-related ingredient claims vs. nutrient content/comparative claims

- When a claim can be considered both a health-related ingredient claim and nutrient content claim, then classification as a nutrient content claim takes precedence e.g. 'kumara are antioxidant rich' will give priority to the antioxidants and therefore will be classified as a nutrient content claim.

100% ingredients

- When used to describe the presence of a 'healthy' ingredient, 100% will be considered a health-related ingredient claim. For example, "100% tomatoes" is considered a 'health-related ingredient claim'.
- When a description (e.g. environment-related) of the ingredient is included in the phrase, two claims will be coded. For example, "100% organic tomatoes" is classified as both an 'other environmental claim' (organic) and 'health-related ingredient claim' (tomatoes), with both claims coded as 'numerical' format.
- Similarly, "contains 100% fruit" is classified as a 'health-related ingredient claim'. '100% real fruit' is both an 'other health-related claim' (with 'real' referring to 'natural') and a 'health-related ingredient claim', whereas 100% fruit juice will not be considered as any claim, since fruit juice is not a health-related ingredient.
- When a percentage or number is used to describe an ingredient which is not considered as a healthy ingredient, it will not be considered a claim. For example, '100% fruit juice', '65% chocolate chips'.

Salt

- Claims referring to salt, e.g. 0% salt or lower in salt, will be classified as nutrient content or comparative claims to keep it similar as for sodium. So salt will not be considered an ingredient in this case, in order to avoid differences with classification of claims related to sodium.

1. **Health-related ingredient claims:**

'Any representation which states, suggests or implies that a food has particular nutritional properties not related to its energy value or to the content of protein, fat and carbohydrates, vitamins and minerals but related to the content of an ingredient'

Classifying health-related ingredient claims is a matter of judgement. Certain health-related ingredient claims may be difficult to distinguish as a claim rather than a listing of an ingredient. A claim is considered to be health related ingredient claim when it states, suggests or implies that a food has particular nutritional properties by virtue of its content of an ingredient.

Whole grains will be classified as a health-related ingredient claim in all cases. A claim that a product contains whole grain is considered a health-related ingredient claim because it is thought that such a claim, even on its own, implies that the product has particular nutritional properties. Whereas just stating 'wholemeal' or 'wholewheat' will not be considered as a claim, it must imply or suggest that it is good e.g. the goodness of wholemeal is considered a claim as it is not just listing the ingredient but suggesting it is good. Similarly a claim that a product contains fruit such as apples or blueberries will not be classified as a health-related ingredient claim because the implication that the product had particular nutritional properties is less clear. Whereas stating the fruit as 'superfruits' implies the product has nutritional properties and is more than just a description of the product. When the amount of a particular ingredient is specified e.g. contains 1 of your 5 fruits a day, then it should be classified as a health-related ingredient claim because in such a case there is an implication that the food has particular nutritional properties. See Table 5 for more examples.

Warnings about the excessive consumption of a food or ingredient such as "excessive consumption of this product may cause a laxative effect" will not be considered any type of claim. Allergy advice will not be considered as health or nutrition claims but will be included under 'other' health-related claims.

Table 5: Ingredients for which health-related ingredient claims are commonly found and examples of health-related ingredient claims (non-exhaustive list).

Health-related ingredients	Examples of health related ingredient claims	
	Inclusions	Exclusions*
Fruits Vegetables Nuts (when not the subject of advice in relation to allergies) Plants Herbs Cereals Whole grain Water Digestive bacteria/probiotic bacteria: Bifidus *Lactobacillus casei* Honey (when a sweetener) Soy Cocoa Oils e.g. olive oil Grains (only when the amount is stated e.g. 5 grains Psyllium Oily fish	• 1 of your 5 a day • 100% plant (goodness) • Contains wholegrain • the goodness of wholemeal/wholewheat • provides one wholegrain serving per bowl • low caffeine • contains probiotics/culture • superfruits • 5 fruits • 100% goodness of sunflower oil • 99% vegetables • 100% potato goodness • supremely seeded bar • wholesome blend of cashews, almonds & peanuts • wholesome cereal • 70% nuts, fruits and seeds • 100% tomatoes • Made from 50% real fruit • Goodness of probiotics • 5+ a day symbol • Supergreens • 30% more apricots • Bifidus actiregularis	• Made with tomatoes • Contains fruits • Contains wholemeal/wholewheat • Made with sunflower oil • 30% more cookie dough/chocolate • 100% chocolate chip • Contains fruit and vegetables • Nuts, fruits and seeds • kumara are antioxidant rich • made from fruit juice • high oleic peanuts • contains blueberries • prebiotic fibre • 100% chicken breast • Nut free • Gluten free

* Examples are either not a claim or classified as another type of claim

2. Nutrient Claims

The following do not constitute nutrient claims as suggested by Codex [32]:

- The mention of substances in the list of ingredients;
- The mention of nutrients as a mandatory part of nutrition labelling
- Quantitative or qualitative declaration of certain nutrients or ingredients on the label if required by national legislation.

Table 6: Nutrients for which nutrition claims are often made (non-exhaustive list)

Nutrients	Vitamins and minerals
Energy *	Vitamin A*
Protein*	Vitamin D*
Glutamate (E-621)	Vitamin E*
Q10	Vitamin K
L carnitine	Vitamin C*
Phenylalanine	Thiamin (B_1)*
Enzymes	Riboflavin (B_2)*
Carbohydrate	Niacin (B_3)*
Sugars*	Vitamin B6*
Added sugars*	Folic acid (B_9)*
(Natural) sugars	Vitamin B12*
Xylitol	Biotin (B_7)*
Sorbitol	Pantothenic acid (B_5)*
Inositol	Potassium
Fat*	Chloride
Saturated fat*	Calcium*
Unsaturated fat*	Phosphorus/phosphate*
Monounsaturated fat*	Magnesium*
Oleic acid	Iron*
Polyunsaturated fat*	Zinc*
Omega 3 fatty acids*	Copper
Omega 6 fatty acids	Manganese
Cholesterol*	Fluoride
Hydrogenated fat	Selenium
Lecithin	Chromium
Fibre*	Molybdenum
Sodium/salt*	Iodine*
Antioxidants	Sulphates
Taurine/guanine	Trygoneline
Caffeine	Calories

* Listed in Annex to Regulation (EC) No 1924/2006 (to reference)

a. Nutrient content claims

'A nutrition claim that describes the level of a nutrient contained in a food [or its energy value]' (CAC/GL 23-1997). In this taxonomy nutrient content claims include 'non-addition claims' defined by CAC/GL 23-1997 as 'any claim that a nutrient has not been added to a food, either directly or indirectly. The nutrient is one whose presence or addition is permitted in the food and which consumers would normally expect to find in the food'] [9, 32].

Table 7: Nutrient content claim examples

Nutrients, vitamins, minerals and energy (see Table 6)	
Inclusions	Exclusions
• low calorie • 90 calories per serving • contains less than 200 calories per serving • fat free • virtually fat free • low fat • less than 2% fat • less than 1g of fat • low in saturated fat • high in omega 3 • free from cholesterol, animal fat • no added sugar • source of fibre • a good source of fibre • a source of dietary nitrite • provides 50% of the recommended daily allowance of calcium • source of calcium • source of vitamins and minerals • 8 vitamins + Iron • good source of niacin • lightly salted • low salt • contains good cholesterol • kumara are antioxidant rich • high oleic sunflower oil • high oleic peanuts • with beta-glucan • ORAC tested (indicates presence of antioxidants) • Calci-trim • Calci-yum • Unsweetened	• reduced calories • reduced sugar • light/lite • diet • lightly sweetened • slightly sweet (does not refer to a nutrient and is just a flavour) • calcium for strong bones • fibre for balance • lightly buttered • lactose free • soy • 30% more peaches • Calci-plus (Nutrient comparative claim) • Energising • Iron man fuel

b. Nutrient comparative claims

Nutrient comparative claim – 'a [nutrition] claim that compares the nutrient levels and/or energy value of two or more foods' (CAC/GL 23-1997).

<u>Light/lite</u>

'Light' is ambiguous. When it is not considered a nutrient comparative claim e.g. 'light and crisp" it will not be taken as any type of claim.

When 'light' is paired with a description of texture, taste, quality (e.g. 'light and crispy'), it is not considered as a claim. In other cases, it will be classified as a nutrient comparative claim.

In some countries ‘diet’ means the same as ‘light’ and will be classified as a nutrient comparative claim.

Sweeteners

Sweeteners are sugar substitutes, which we infer to mean ‘reduced sugar’. Therefore, claims such as ‘artificially sweetened’ and ‘sweetened with Stevia plant’, are classified as nutrient comparative claims, as they are lower in sugar compared to similar products not containing sweeteners, however we cannot rule out that the product contains no sugar at all.

Claims such as ‘honey as sweetener’ are considered ‘other claims’ (sub claim category- other health-related claims) as honey is a natural sweetener, which is not known to be lower in sugar.

‘No artificial sweeteners’ is classified as ‘other health-related claims’, similar to ‘naturally sweetened’.

Unsweetened’ is classified as a nutrient content claim, as it is implies that no sugar has been added.

Table 8: Examples of nutrient comparative claims

Nutrients, vitamins, minerals and energy (see Table 6)		
Examples Inclusions	Exclusions	Examples of words used to compare
• 33% less fat than a standard vanilla ice cream • reduced fat • naturally lower in saturates than traditional cooking oil • 60% less salt than original • fewer calories than regular sugar • lighter • higher in protein • less calories • fewer calories per spoonful • less salt • Splenda sweetened • light/lite choices (referring to fat content) • Stevia plant as sweetener (refers to less sugar) • one of the highest protein snacks • lean beef • baked not fried • Calci-plus	• low in salt • low in fat • more tasty • more creamy • less than 95 calories per serving • less than 1g of fat • calci-trim • calci-yum	• reduced • less/more than • lower/higher • fewer/greater • increased

Health claims

'Any representation that states, suggests, or implies that a relationship exists between a food or a constituent of that food and health.' (CAC/GL 23-1997)

Health claims describing or referring to psychological and behavioural functions are not considered e.g. calms, soothes etc. Health claims describing or referring to slimming or weight control or a reduction in the sense of hunger or an increase in the sense of satiety or to the reduction of the available energy from the diet are considered in the INFORMAS taxonomy.

Rules

- When a claim includes both a nutrient and a disease, it will be classified as a 'reduction of disease risk claim'.
- When a claim includes a nutrient to 'lower' or 'reduce' the risk of a health condition/disease, it will be classified as a 'reduction of disease risk claim' e.g. increases iron absorption (related to anaemia).
- When a claim includes a nutrient and a function, it will be classified as 'nutrient and other function claim'. Functions can be quite diverse and also refer to strength, metabolism etc. Examples are given in the tables below.
- When a claim includes only a function without the specific mention of a nutrient or ingredient or mentions to aid a specific body system without specifying an ingredient or a nutrient, it will be classified as a 'general health claim'.
- The only exception is claims directly related to heart disease, where even if function and/or nutrient is not stated, it will be classified as a reduction of disease risk claim, since it is clearly referring to cardiovascular diseases. Only claims directly referring to CVD are included, so not claims related to diabetes, hypertension and cholesterol.

3. General Health claim

'A health claim concerning the general beneficial effects of the consumption of foods or their constituents on health'.

The Codex standard (CAC/GL 23-1997) does have a category of permitted claims, called 'Claims related to dietary guidelines or healthy diets' which is similar to the INFORMAS category for general health claim but specifies that 'Foods should not be described as "healthy" or be represented in a manner that implies that a food in and of itself will impart 'health', whereas the INFORMAS category of general health claim would include claims such as "healthy" or "diet" [32].

A claim that states, suggests or implies the product benefits a certain health system, without referring to a nutrient or the reduction of a certain disease or disease risk factor will be classified as a general health claim.

- Digestive health e.g. 'helps your digestive system'

- Bone health e.g. ‘good for your bones’
- Oral health e.g. ‘for healthy teeth and gums’, ‘tooth friendly’

The only exception is claims relating to heart health. This will always be a reduction of disease risk claim even in the absence of stating a nutrient or reduction of a certain disease or disease risk factor e.g. ‘for heart health’, NZ heart foundation tick implies reduced heart disease risk.

Table 9: General health claim examples

Examples Inclusions	Exclusions	
• healthy eating • energizing • iron man fuel • Nordic keyhole logo • Choices logo • superfood • diet* • made with goodness • superior health • good for you • supports health • nutritious • keeps you full for longer- referring to protein or fibre • healthy food award • low glycaemic index • full of good stuff • Increases iron absorption • WeightWatchers • wellbeing • for health-conscious people • wholesome • contains essential nutrients • FDI World Dental Federation approved (oral health) • for growing kids • school canteen approved • ‘FIT’ (referring to keeping healthy) • guilt free • tummy love • lifestyle choice • goodness range	• improved recipe • better taste • premium • best quality • gives you a just brushed clean feeling • this product will make you feel happy • won’t ruin your appetite • appetising • enriched • feel more alive • Heart Foundation tick	If words such as ‘goodness’, ‘nutritious’ or ‘super’ are used to describe the product, this will be regarded as referring to a ‘healthy’ product.

**Only when it does not mean ‘light’*

4. **Nutrient and other function claim:**

Nutrient function claim:

'A health claim that describes the physiological role of the nutrient in growth, development and functions of the body.' (CAC/GL 23-1997) [Although Codex classifies nutrient function claims as nutrition claims it seems more logical to classify them as health claims]

"Nutrient A (naming a physiological role of nutrient A in the body in the maintenance of health and promotion of normal growth and development)".

Other function claim:

'Health claims concerning specific beneficial effects of the consumption of foods or their constituents, in the context of the total diet on normal functions or biological activities of the body. Such claims relate to a positive contribution to health or to the improvement of a function or to modifying or preserving health.' (CAC/GL 23-1997)

A claim that states, suggests or implies that the product benefits a certain health system, and refers to a nutrient will be classified as a nutrient and other function claim.

Nutrient AND function included:

- Nutrient AND muscle
- Nutrient AND bone
- Nutrient AND growth
- Nutrient AND energy
- Nutrient AND strength
- Nutrient AND brain
- Nutrient AND nutrient absorption
- Nutrient AND digestion
- Nutrient AND immunity
- Nutrient AND overall health

Table 10: Nutrient and other function claim examples

Nutrients, vitamins, minerals and energy (see Table 6) + function Example Inclusions	Exclusions (Does not state nutrient/substance)	
• Includes calcium which helps build stronger teeth and bones • Made with calcium and vitamin D which help maintain bones and teeth • One 250ml glass of milk will give you one third of your daily calcium needs, to build stronger bones and teeth • Dairy free soya drink is naturally kind on tummies • Oats contain fibre which is good for your heart • Fibre helps maintain a healthy digestive system • Magnesium for growth • Consumption of Omega 3 fatty acids as part of a healthy lifestyle, helps maintain heart health. • Wholegrain provides magnesium and phosphorus which are essential for facilitating the body's use of energy and for forming strong bone • 'Nutrient AND growth' = nutrient AND development e.g. protein for development. • 'Nutrient AND energy' = nutrient AND power e.g. energy snack to keep you powering. • 'Nutrient AND brain function' claims also include synonymous terms such as 'focus', e.g. 'fibre for focus'. • 'Nutrient AND overall health' includes: Calcium for vitality, fibre for balance, MCFAs for metabolism	• Aids digestive health • Increases iron absorption • Whitens teeth • Good for bones • Easy to digest	"Substance A (naming the effect of substance A) on improving or modifying a physiological function or biological activity associated with health".

5. Reduction of disease risk claim:

Health 'claims relating the consumption of a food or food constituent, in the context of the total diet, to the reduced risk of developing a disease or health-related condition.' (CAC/GL 23-1997)

Risk reduction means significantly altering a major risk factor(s) for a disease or health related condition. Diseases have multiple risk factors and altering one of these risk factors may or may not have a beneficial effect. The presentation of risk reduction claims must ensure, for example, by use of appropriate language and reference to other risk factors, that consumers do not interpret them as prevention claims [32].

Examples:

'A healthful diet low in nutrient or substance A may reduce the risk of disease D'.

'Food X is low in nutrient or substance A' or 'A healthful diet rich in nutrient or substance A may reduce the risk of disease D'.

Any claim concerning heart health will be considered a 'reduction of disease risk claim', e.g. 'for heart health' and 'lowers your risk of heart disease', even if no specific nutrient or ingredient is mentioned within the claim

Table 11: Reduction of disease risk claim examples

Examples Inclusions	Exclusions
• All heart related claims • Heart foundation tick (NZ or Australia) logo (reduces the risk of heart disease) • Calcium to reduce risk of osteoporosis • Extra sugar free gum is beneficial for dental health as it helps to neutralise plaque acids • Helps lower cholesterol re-absorption • Lowers your blood pressure • FODMAP friendly (refers to the reduction of Irritable bowel syndrome) • Contains fibre which is good for your heart • Increases iron absorption (related to anaemia)	• Aids digestive health (general health claim) • To maintain a healthy immune system (general health claim) • Low GI • Calcium for strong bones

Other Claims

Two sub claim categories have been created under the category 'other claims' to address claims that are not specifically related to nutrient or disease but are still heath related e.g. gluten free, or environment-related.

- **Other health-related claims:**
  - Allergies/intolerance e.g. nut free, soy, gluten free, dairy free
  - Food safety (toxin- and pesticide-free), e.g. BPA-free, HACCP Australian Food Safety Programme Certification
  - Vegetarian/vegan approved
  - Natural products & presence/absence of artificial additives (flavours, colours, sweeteners & preservatives)

- **Environment-related claims:**
  - Organic- 'Bio' is considered synonymous with 'organic'
  - Genetic modification, e.g. GMO-free
  - Ecological farming, e.g. "help the bees"
  - Greenhouse gas certification, e.g. Carbon Zero
  - Biodynamic production (Demeter symbol)

- **Excluded:**
  - Taste, e.g. tasty, delicious, crunchy, nutty

- Religion-related symbols, e.g. Kosher, Halal
- Animal ethics-related claims e.g. cage free

'Natural' or 'naturally' or 'real' when stated in the presence of other flavours (i.e. when not a flavour) will be considered as 'other claim' (sub claim: other health related claim) as it is similar to no artificial flavours or colours.

Phrases or symbols indicating the product origin are not classified as claims as this is another component of the taxonomy (see figure 1). For example, "made in New Zealand", "product of Spain", "Australian prunes".

Table 12: Other claims examples

Examples **Inclusions**	**Exclusions**

Other health-related claims
• Gluten, gluten free
• Nut free
• For vegans
• Egg free
• Fruit free/real fruits
• Real cheese
• 25% fruit juice
• Wheat free
• Preservatives
• Colourings
• Flavourings (incl. flavour enhancers)
• Artificial sweeteners
• Genetically modified organism (GMOs)
• Vegetarian Society approved
• Extra virgin olive oil
• Paleo-friendly
• Natural/naturally
• Pure
• Wholefoods
Environment-related claims
• UTZ certified
• Fair trade
• Rainforest Alliance Certified
• EU Agriculture symbol
• Mother Earth
  • Organic
  • Biodynamic production (Demeter symbol)
  • Carbon Zero
	• Smooth
	• Chocolaty
	• Nutty
	• Nuts, seeds, grains
	• Light
	• Chunky, thin
	• Refreshing taste
	• Farm grown for you
	• Australian made
	• Rich flavour
	• No substitute from good quality
	• Not from concentrate/from concentrate
	• Creamy
	• Gold award e.g. ice-cream (taste, flavour or quality).
	• Related to taste - delicious, tasty, yummy, great taste
	• Texture - crispy, chewy, crunchy etc.
	• Halal, Kosher
	• Family size
	• Family choice
	• Homogenised or pasteurised (methods of production)
	• Raw
	• Whole soybeans i.e. not from powder
	• UHT milk
	• Biodegradable ecoplastic packaging
	• Awards e.g. 'Deep South Gold Award' (ice cream), usually implies good taste.
	• Made with fresh milk
	• Permeate free

Taxonomy format

The format of food labelling information and claims on food packages has an important role in relation to its effects on providing information to consumers and understanding nutritional information [33].

The INFORMAS taxonomy for the expanded and optimal approach does take into account whether the labelling is verbal, numerical or pictorial (symbolic) to a certain extent e.g. 'high in whole grain', '10% whole grain' and a symbol or logo representing whole grain present. However it does not change what type of claim it is, it would all be defined as a health-related ingredient claim according to the taxonomy presented in Fig. 1. Where there is a combination of numerical and verbal format used within the same claim, e.g. contains 1 of your 5 a day, then this would be coded as a numerical format, as the number gives more importance/strength to the claim.

Table 13: Taxonomy format examples

	Taxonomy format		
	Numerical	Verbal	Symbolic
Claim examples	- 91% wholegrain - 7 essential nutrients - Contains 1 of your 5 a day - 99% fat free - 75% less saturated fat - contains 5 fruits	- Source of fibre helps lower cholesterol re absorption - contains whole grains - goodness of grains - contains vitamins and minerals - made with goodness of oats	   

Codes for classifying claims

The INFORMAS taxonomy has 3 major types of claims: nutrition claims, health claims and other claims. These are categorised into seven categories (Table 14). A coding system classifies the different types of claims (Table 14), claim format (Table 15) and claim content (Table 16).

Table 14: INFORMAS taxonomy: Type of claims

Claims	Coding
Nutrition Claim	
Health-related ingredient claim	1
Nutrient Claim	
Nutrient content claim	2
Nutrient comparative claim	3
Health Claim	
General Health claim	4
Nutrient and other function claim	5
Reduction of disease risk claim	6
Other Claim	7
None	0

Table 15: INFORMAS taxonomy format

Taxonomy format	Coding
Numerical	1
Verbal	2
Symbol	3
No claim	0

Claim content classification

Different food group categories will contain different types of claims on products. Within each type of nutrition and health claim, the content of claims will differ. The exact wording of the different claims will not be captured since this is too burdensome for the expanded and optimal approach. Alternatively, a coding system has been developed and allows the addition of new nutrients and/or substances to the list when needed. Table 16 shows the most common nutrient and ingredient content claims for each type of claim, with their coding. For analysis purposes some categories can be combined e.g. vitamins, minerals and antioxidants included as one category for analysis as individual vitamins and minerals will make the list too long and is not so relevant to the major INFORMAS objective of reducing obesity and diet-related NCDs. To keep all coding consistent and to compare content claims across all food categories and countries, the coding will not be changed. Any additional claims will follow on from the last highest number used for coding.

Table 16: Claim content classification

Claim content	Coding	Claim content	Coding
NUTRITION CLAIM		**HEALTH CLAIM**	
Health-related ingredient claim		**General health claim**	
Wholegrain	1	General Super, healthy	18
Fruits/nuts/honey	2	Low GI/energy density	19
Grains/seeds	3	Specific body systems Digestive health Bones health Oral health	 44 46 47
Vegetables/plants	35	**Nutrient and other function claim**	
Bacteria/culture/probiotics/prebiotics	33	Nutrient + muscle	20
Milk/cream	37	Nutrient + bone	21
Edible oils/oil emulsions	38		
Cocoa/cacao	50	Nutrient + growth	22
Nutrient content claim		Nutrient + energy	23
Fibre	4	Nutrient + strength	24
Energy	5	Nutrient + brain	25
Antioxidants/vitamins/minerals/hormones	6	Nutrient + nutrient absorption	34
Carbohydrates	7	Nutrient + digestion	36
Fats	8	Nutrient + immunity	39
Saturated fat	55		
Trans fat	56	Nutrient + overall health	48
Sugar	9	**Reduction of disease risk claim**	
Protein	10	Heart-related Heart foundation tick	26 27
Salt	11	Nutrient absorption Cholesterol absorption	49 28
Cholesterol	12	Diabetes Glycaemic impact	 29
Omega 3	13	Osteoporosis	30
Omega 6	54	Digestive health	45
Taurine/guanine	51		
Caffeine	52	**OTHER CLAIM**	
Nutrient comparative claim		Other health-related claim	31
Reduced fat	14	Environment claim	41
Saturated fat	57		
Trans fat	58		
More calcium	15		
Less salt	16		
Reduced sugar	17		
Reduced calories	32		
More fibre	40		
Reduced carbohydrates	42		
More protein	43		
Reduced cholesterol	53		

This is not a complete list. Additional content claims may need to be added.

Taxonomy for promotional characters and premium offers

The presence and power of promotional characters on food packages will also be assessed. These will be classified into the following categories as shown in Table 17. This is according to an approach previously used in Australia: cartoons and company owned characters, licenced characters, sportspersons, celebrities and movie tie-ins [33]. In addition, the thematic content will be categorised into promotional characters or premiums.

Monuments/figures (such as Statue of Liberty, London guards, Leaning Tower of Pisa, etc.) and general photos of people/family are excluded from any promotional category.

Rules:

- The same promotional character appearing multiple times on a product will only be classified ONCE as a promotional character e.g. Dora the explorer three times on a product will only be captured once regardless of variations of the character.
- Two characters belonging to the same team/program will be coded separately e.g. 'The Simpsons', the character 'Bart Simpson' and 'Homer Simpson' will be coded as two promotional characters.
- For different cartoons on a product e.g. cartoon of a goat, sheep, butterfly will be coded individually i.e. three 'cartoon/company owned' promotional characters.

Table 17: Coding for promotional characters and premium offers

Promotional Characters	Coding
Cartoon/company owned character e.g. M&Ms	1
Licenced character e.g. Dora the Explorer	2
Amateur sportsperson e.g. person playing a sport	3
Celebrity (non-sports) e.g. Jamie Oliver	4
Movie tie-in e.g. Shrek	5
Famous sportsperson/team e.g. All Blacks	6
Non-sports/historical events/festivals e.g. Christmas, Anzac Day	7
'For kids' e.g. image of a child, 'great for school lunches', 'for school lunchboxes'	8
Awards e.g. Best Food Award 2014, 'award winning', 'number one best-selling'	9
Sport events e.g. Rugby World Cup	10
None	0
Premium offers	
Game and app downloads	1
Contests	2
Pay 2 take 3 or other	3
20% extra or other	4
Limited edition	5
Social charity	6
Gift or collectable	7
Price discount	8
Loyalty programs	9
None	0

Data analysis

Inclusions and exclusions

Products with multiple nutrient declarations, such as variety packs or incomplete nutrition data will be excluded from the analysis. Though for products with multiple nutrient declarations, labelling can be analysed, nutrient composition cannot be assessed for individual products. Multiple pack sizes for individual products will be included to enable any differences in labelling on various pack sizes to be recorded.

Classification of products as 'healthy'/'less healthy'

Nutrient profiling is a scientific method to assess the nutritional quality of food and beverage products [34]. Having a common system globally for nutrient profiling may have potentially a wide range of applications, however, a single best system does currently not exist for global applicability due to countries having different legislation, food intake data and/or dietary recommendations.

It is **essential** for countries to have composition information of all the products analysed in order to classify them as 'healthy' or 'less healthy'. This will allow the data to be analysed using the same nutrient profiling system across countries. Indicators, such as the number of food products in certain categories carrying a claim while being classified as 'less healthy', will be used to characterise this aspect of the food environment.

One system that can be used is the Food Standards Australia New Zealand (FSANZ) Health Claims Nutrient Profiling Scoring Criteria (NPSC), used to determine whether food and beverage products are eligible to carry a health claim. The 'healthy' criteria are set by the FSANZ Health Claims Nutrient Profiling Scoring Criterion (NPSC), a nutrient profiling tool that has been tested on more than 10,000 New Zealand and Australian food products [16, 35]. Using FSANZ's NPSC, overall, 59% of products (n=550) from 7 food groups and 51 food categories in supermarkets previously met the 'healthy' criteria in New Zealand [36]. Eligibility is graded on whether the product meets the Nutrient Profiling Scoring Criterion (NPSC) [37].

Foods and beverages available in a wide range of public sector settings can be scored against the NPSC and food products eligible to carrying a health claim can be regarded as 'healthy' and others 'less healthy'. The FSANZ Health Claims Nutrient Profiling Scoring Criteria (also referred to as Nutrient Profiling Standard Calculator) has been tested on more than 10,000 NZ and Australian food products to assist food manufacturing companies and other agencies [38]. The model is based on the UK nutrient profiling model used for the regulation of TV advertising of food to children [39].The NPSC system provides assessment on overall nutritional composition of a food or beverage product by firstly applying 'baseline points' for energy, saturated fat, total sugar, and sodium content per 100g and then

'modifying' points for dietary fibre (F points), protein (P points), and percentage of fruit and vegetable (including nuts and legumes including coconut, spices, herbs, fungi, seeds and algae) content (V points). A final score is given by subtracting the modifying points from the baseline points (baseline points – (V points) – (P points) – (F points)) [40]. In the case where a V or F point could not be obtained for the product (percentage of fruit and/or vegetables or fibre content not mentioned in the ingredient list or NIP), a standard V or F point was used based on the most common percentage of fruit or vegetables or fibre content for other products in the same category [16].
Eligible products (those meeting the NPSC) will be classified as 'healthy' and non-eligible products as 'less healthy' [35].

Data analysis components

To derive the indicators Table 18 shows what information needs to be analysed

Table 18: Data analysis components

Important data analysis components
Nutrition Information
Total number of products with list of ingredients
Total number of products with quantitative ingredient declaration
Total number of products with nutrient declarations
Total number of products with Supplementary nutrition information (SNI)
Total number of claims
Total number of claims for each claim type
Total number of claims for each format type
Total number of products
Total number of products carrying claims
Total number of products carrying claims for each claim type
Total number of products with each format type
Total number of 'healthy' and 'less healthy' products
Total number of 'healthy' vs 'less healthy' products for each claim type
Total number of 'healthy' vs 'less healthy' products for each content claim
Total number of promotional characters and premium offers
Total number of products with promotional characters
Total number of products for each promotional character type
Total number of products with premium offers
Total number of products for each premium offer type
Total number of products that are healthy vs 'less healthy' for each promotional character type
Total number of products that are healthy vs 'less healthy' for each promotional character type

Statistical analyses

Simple tests of significance will be used to assess whether labelling and promotion characters are different between 'healthy' and 'less healthy' products within a category.

Chi-Square tests will be used to compare the number of claims on 'healthy' and 'less healthy' products within a category. A $p<0.05$ will be considered statistically significant. Multiple testing will be adjusted for.

Databases

The different variables that will need to be considered for analysis are shown in Table 19. For a sample of the database containing the different variables for analysis, see annex 2.

Table 19: Different variables for analysis (to be coded for each claim on the food packages)

Variables	Description
GENERAL	
Country	Country of data collection
Place/Area	Place of data collection
Outlet	The retail outlet where product data was collected
Date	Date when the product was bought/photographed
PRODUCT	
Barcode	Product barcode
Product name	Product name for each product
Brand Name	Brand name for each product
Food Group Code 1	Food classification code 1
Food Group Name 1	Food name code 1
Food Group Code 2	Food classification code 2
Food Group Name 2	Food name code 2
Food Group Code 3	Food classification code 3
Food Group Name 3	Food name code N
LABELLING INFO	
ID	Presence of ingredient list (0=no, 1=yes)
QUID	Presence of quantitative ingredient list (0=no, 1=yes)
IDlist	List of ingredients in English, separated by semicolon
QUIDlist	List of ingredients in English, separated by semicolon
NIP	Presence of nutrition information panel (0=no, 1=yes)
Multiple NIP	Presence of multiple nutrition information panels (0=no, 1=yes)
SNI*	Presence of supplementary nutrition information (0=no, 1=yes)
GDA	Presence of GDA (0=no, 1=yes)
GDAlist	List of nutrients (including energy) on GDA in English separated by semicolon
CLAIMS	
Claim	Type of claim: 1 Health-related ingredient claim 2 Nutrient content claim 3 Nutrient comparative claim 4 General health claim 5 Nutrient and other function claim 6 Reduction of disease risk claim 7 Other claim

Variables	Description
Format	Format of claim: 1 Numerical 2 Verbal 3 Symbolic
Wording	Claim content: description of claims using the coding system (see detailed table) 1→ N
Place	1 Front of pack 2 Elsewhere on the package (not front of pack)
Total no. of claims for each product	Total number of claims for each product and sum of all products
Nutrition claim	Total number of nutrition claims for each product and sum of all products
Health claim	Total number of health claims for each product and sum of all products
Other claim	Total number of 'other' claims for each product and sum of all products
Total no. of diff type of claims	Total number of different type of claims for each product and total products
C1	Total number of health-related ingredient claims for each product and sum of all products
C2	Total number of nutrient content claims for each product and sum of all products
C3	Total number of nutrient comparative claims for each product and sum of all products
C4	Total number of general health claims for each product and sum of all products
C5	Total number of nutrient and other function claims for each product and sum of all products
C6	Total number of other claims for each product and sum of all products
Total no. of diff types of sub claims	Total number of different types of claims used (C1-C6) for each product and total products
Format count	Total number of claim formats for each product and sum of all products
Numerical	Total number of numerical claims for each product and sum of all products
Verbal	Total number of verbal claims for each product and sum of all products
Symbolic	Total number of symbolic claims for each product and sum of all products
Wording (content) count	Total number of claim wording for each product and sum of all products (should be the same sum as for total claims and format count for all products)
Claim content	Total number for each type of content claim
PROMOTION	
Promotion	Type of promotional character: 1 Cartoon/Company owned character 2 Licenced character 3 Amateur sportsperson 4 Celebrity 5 Movie tie-in 6 Famous sportsperson/team 7 Non-sports/historical events/festivals 8 'For kids' 9 Awards

Variables	Description
	10 Sport events 0 None
Premium	Type of premium: 1 Game and app downloads 2 Contests 3 Pay 2 take 3 or other 4 20% extra or other 5 Limited edition 6 Social charity 7 Gift or collectable 0 None
Total promotional characters	Total number of promotional characters for each product and sum of all products
Total different type of promotional characters	Total number for promotional characters of each type for each product and sum of all products
COMPOSITION (per 100g or ml of product)	
Energy	
Energy unit	
Protein	
Protein unit	
Total fat	
Total fat unit	
Saturated fat	
Saturated fat unit	
Trans fat	
Trans fat unit	
Carbohydrates	
Carbohydrates unit	
Sugar	
Sugar unit	
Fibre	
Fibre unit	
Sodium	
Sodium unit	
Fruits	
Fruits unit	
Vegetables	
Vegetables unit	
Serving size	

**Please insert an extra column for each SNI present (0=no, 1=yes)*

Indicators

The indicators that will be derived from the study and tracked over time in future surveys are shown in Table 20.

The percentage of packaged food in the food supply is very important as some countries may have smaller supply of packaged foods.

Table 20: Proposed indicators relating to the prioritised food labelling components

Food labelling component	**Indicators**	**Indicators for 'healthy' vs. 'less healthy' foods**
Lists of ingredients	• Proportion of foods with a list of ingredients[a] • Proportion of foods with QUID*[b]	• Proportion of healthy vs less healthy foods with a list of ingredients[a] • Proportion of healthy vs less healthy foods with QUID* [b]
Nutrient declarations	• Proportion of foods with a nutrient declaration[a] • Proportion of foods with a nutrient declaration in line with Codex standards [c]	• Proportion of healthy vs. less healthy foods with a nutrient declaration [a] • Proportion of healthy vs. less healthy foods with a nutrient declaration in line with Codex standards [c]
Supplementary nutrition information (SNI)	• Proportion of foods with SNIs[a] • Proportion of foods with each different SNI scheme in use[a]	• Proportion of foods that are healthy vs less healthy with SNIs[a] • Proportion of healthy vs. less healthy foods with each different SNI scheme in use[a]
Nutrition claims	• Proportion of foods making a claim **[a] • Proportion of different types of nutrition claims on foods[b] • Proportion of foods making a claim that meets Codex standards[c] • Proportion of foods with nutrition claims referencing NCDs[a] • Proportion of different types of content claims on foods[b]	• Proportion of healthy vs. less healthy foods making a claim **[a] • Proportion of different types of nutrition claims found on healthy vs. less healthy foods[b] • Proportion of healthy vs. less healthy foods making a claim that meets Codex standards **[c] • Proportion of healthy vs. less healthy foods with nutrition claims referencing NCDs[a] • Proportion of different types of content claims on healthy vs less healthy foods[b]
Health claims	• Proportion of foods making a claim **[a] • Proportion of different types of health claims on foods[b] • Proportion of different types of content claims on foods[b] • Proportion of health claims referencing NCDs on foods[a] • Proportion of foods making a claim that meets Codex standards **[c]	• Proportion of healthy vs. less healthy foods making a claim**[a] • Proportion of different types of health claims on healthy vs less healthy foods[b] • Proportion of healthy vs. less healthy foods with different types health claims[b] • Proportion of healthy vs. less healthy foods with health claims referencing NCDs[a] • Proportion of healthy vs. less healthy foods making a claim that meets Codex standards **[c]
Promotional characters	• Proportion of different types of promotional characters[b]	• Proportion of different types of promotional characters on healthy vs. less healthy foods[b]

* Quantitative ingredient declaration

** With respect to an agreed definition or definitions.

[a] Minimal approach

[b] Expanded approach

[c] Optimal approach

Quality control

To minimise errors, the persons performing the coding must understand the classification system, and the differences between the types and format of claims and promotional characters. Variations in the coding and variability in interpretation of data will be the main sources of error.

Inter-rater reliability within a country

Countries need to analyse inter-rater reliability based on two people coding the same food product categories to compare the differences in coding. This can be done for a few food categories (should not necessarily be done for the whole sample of foods).

Inter-rater reliability between countries

The University of Auckland coordination team will need to check the coding for a sample of product categories to ensure coding is done correctly according to the INFORMAS taxonomy. The coding will be checked for about 5% of food products containing one or more claims in each of the included food categories. The pictures of the foods will be needed for checking, especially related to the symbolic claims. For each of the foods included, the claims will have to be translated into English (and back to the original language by an independent person) and provided to the coordinating centre in Auckland for checking.

Some parts of the protocol, especially related to the coding and classification of the health-related labelling components and promotional characters on food products, will have to be translated (and back translated by another independent person) into the country specific language(s) for the research assistants who are going to perform the coding and classification of the claims.

It is important to check for any variation that may be introduced as a result of translation e.g. reduced fat (nutrient comparative claim) in another language may be interpreted as low fat (nutrient content claim).

References

1. Rayner M, Wood A, Lawrence M, Mhurchu CN, Albert J, Barquera S, Friel S, Hawkes C, Kelly B, Kumanyika S *et al*: **Monitoring the health-related labelling of foods and non-alcoholic beverages in retail settings**. *Obesity Reviews* 2013, **14**(S1):70-81.
2. Sacks G, Veerman JL, Moodie M, Swinburn B: **'Traffic-light' nutrition labelling and 'junk-food' tax: a modelled comparison of cost-effectiveness for obesity prevention**. *International Journal of Obesity* 2011, **35**(7):1001-1009.
3. Hawkes C: **Nutrition Labels and Health Claims: The Global Regulatory Environment**. In*.* Geneva; 2004: 1-88.
4. Blewett N GN, Pettigrew S, Reynolds C, Yeatman H.: **Labelling Logic - Review of Food Labelling Law and Policy**. In*.* Canberra, Australia; 2011.
5. Rosentreter SC, Eyles H, Mhurchu CN: **Traffic lights and health claims: A comparative analysis of the nutrient profile of packaged foods available for sale in New Zealand supermarkets**. *Australian and New Zealand Journal of Public Health* 2013, **37**(3):278-283.
6. Hawley KL, Roberto CA, Bragg MA, Liu PJ, Schwartz MB, Brownell KD: **The science on front-of-package food labels**. *Public Health Nutrition* 2013, **16**(3):430-439.
7. Hersey JC, Wohlgenant KC, Arsenault JE, Kosa KM, Muth MK: **Effects of front-of-package and shelf nutrition labeling systems on consumers**. *Nutrition reviews* 2013, **71**(1):1-14.
8. Mhurchu CN, Gorton D: **Nutrition labels and claims in New Zealand and Australia: a review of use and understanding**. *Australian and New Zealand journal of public health* 2007, **31**(2):105-112.
9. Codex Alimentarius Commission: **Guidelines for use of nutrition and health claims**. In: *CAC/GL 23-1997.* Rome.
10. **Nutrition labels** [http://www.wcrf.org/int/policy/nourishing-framework/nutrition-labels]
11. European Parliament and of the Council: **Regulation (EU) No 1169/2011 of the European Parliament and of the Council,of 25 October 2011 on the provision of food information to consumers, amending Regulations (EC) No 1924/2006 and (EC) No 1925/2006 of the European Parliament and of the Council, and repealing Commission Directive 87/250/EEC, Council Directive 90/496/EEC, Commission Directive 1999/10/EC, Directive 2000/13/EC of the European Parliament and of the Council, Commission Directives 2002/67/EC and 2008/5/EC and Commission Regulation (EC) No 608/2004**. *Official Journal of the European Union* 2011:L 304/318-L 304/363.
12. Pietinen P, Valsta LM, Hirvonen T, Sinkko H: **Labelling the salt content in foods: A useful tool in reducing sodium intake in Finland**. *Public Health Nutrition* 2008, **11**(4):335-340.
13. Lalor F, Kennedy J, Flynn MAT, Wall PG: **A study of nutrition and health claims - A snapshot of whats on the Irish market**. *Public Health Nutrition* 2010, **13**(5):704-711.
14. European Parliament and of the Council: **Regulation (EC) No 1924/2006 of the European Parliament and of the Council of 20**

December 2006 on nutrition and health claims made on foods. *Official Journal of the European Union* 2006:L404/409–L404/425.
15. **Nutrition content claims and health claims** [http://www.foodstandards.govt.nz/consumer/labelling/nutrition/Pages/default.aspx]
16. Food Standards Australia New Zealand: **Short guide for industry to the Nutrient Profiling Scoring Criterion (NPSC) in Standard 1.2.7 - Nutrition, Health and Related Claims**. In. Canberra, Australia; 2013.
17. **About the Tick** [http://www.heartfoundation.org.nz/healthy-living/healthy-eating/heart-foundation-tick/what-is-the-tick]
18. Young L, Swinburn B: **Impact of the Pick the Tick food information programme on the salt content of food in New Zealand**. *Health Promot Int* 2002, **17**(1):13-19.
19. **Food labelling** [http://www.foodsmart.govt.nz/whats-in-our-food/food-labelling/]
20. Noakes M CD, A: **The National Heart Foundation's Pick the Tick' program. Consumer awareness, attitudes and interpretation**. *Food Australia* 1991, **43**(6):262-266.
21. Watson WL, Kelly B, Hector D, Hughes C, King L, Crawford J, Sergeant J, Chapman K: **Can front-of-pack labelling schemes guide healthier food choices? Australian shoppers' responses to seven labelling formats**. *Appetite* 2014, **72**:90-97.
22. **Front-of-pack labelling updates** [http://www.health.gov.au/internet/main/publishing.nsf/Content/foodsecretariat-front-of-pack-labelling-1]
23. United Kingdom Food Standards Agency: **Front of pack nutritional signpost labelling technical guide. Issue 2**. In. London (UK); 2007.
24. **Health Star Rating – new food labelling system** [http://www.foodsafety.govt.nz/industry/general/labelling-composition/health-star-rating/]
25. Tang TN, G.D.; Wang, X.: **Does synergy work? An examination of cross-promotion effects.** *International Journal of Media Management* 2007, **9**(4):8.
26. Neeley SMS, D.W.: **Using animated spokes-characters in advertising to young children: does increasing attention to advertising necessarily lead to product preference?** *Journal of Advertising* 2004, **33**(3):17.
27. Roberto CA, Baik J, Harris JL, Brownell KD: **Influence of Licensed Characters on Children's Taste and Snack Preferences**. *Pediatrics* 2010, **126**(1):88-93.
28. Smits TV, H.: **Endorsing children's appetite for healthy foods: Celebrity versus non-celebrity spokes-characters.** *Communications* 2012, **37**(4):21.
29. Dixon HS, M.; Niven, P.; Kelly, B.; Chapman, K.; Donovan, R.; Martin, J.; Baur, L.A.; Crawford, D.; Wakefield, M.: **Effects of nutrient content claims, sports celebrity endorsements and premium offers on pre-adolescent children's food preferences: experimental research.** *Pediatr Obes* 2014, **9**(2):11.
30. **Nutritrack: Reformulation of Processed Foods to Promote Health** [http://www.nihi.auckland.ac.nz/page/current-research/our-nutrition-and-physical-activity-research/nutritrack-reformulation-processe]

31. Kanter RR, M.; Corvalán, C.: **Photographic methods for measuring packaged food and beverage products in supermarkets.** *Current Developments in Nutrition* 2017, **1**(10).
32. **List of Standards** [http://www.codexalimentarius.org/standards/list-of-standards/en/?provide=standards&orderField=fullReference&sort=asc&num1=CAC/GL]
33. Siegrist M, Leins-Hess R, Keller C: **Which front-of-pack nutrition label is the most efficient one? The results of an eye-tracker study**. *Food Quality and Preference* 2015, **39**:183-190.
34. World Health Organization: **Nutrient profiling: Report of a WHO/IASO technical meeting**. In. United Kingdom; 2010.
35. Food Standards Australia New Zealand: **Calculation Method for Determining Foods Eligible to Make Health Claims: Nutrient Profiling Calculator**. In. Canberra, Australia.
36. Eyles H, Gorton D, Ni Mhurchu C: **Classification of 'healthier' and 'less healthy' supermarket foods by two Australasian nutrient profiling models**. *N Z Med J* 2010, **123**(1322):8-20.
37. **Nutrient Profiling Scoring Calculator** [http://www.foodstandards.govt.nz/industry/labelling/pages/nutrientprofilingcalculator/Default.aspx]
38. Food Standards Australia and New Zealand: **Calculation Method for Determining Foods Eligible to Make Health Claims: Nutrient Profiling Calculator**. In.
39. Rayner M SP, Stockley L **Nutrient Profiles: Options for Definitions for Use in Relation to Food Promotion and Children's Diets**. In. London, United Kingdom.: British Heart Foundation Health Promotion Research Group, Department of Public Health; 2004.
40. **Short guide for industry to the Nutrient Profiling Scoring Criterion (NPSC) in Standard 1.2.7 – Nutrition, Health and Related Nutrition** [http://www.foodstandards.govt.nz/industry/labelling/Documents/Short-guide-for-industry-to-the-NPSC.pdf]

Annexes

List of tables

Glossary

V point

Fruit and vegetable points

F point

Fibre points

P point

Protein points

'Less healthy'

Does not meet the NPSC criteria

'Healthy'

Meets the NPSC criteria

Claim
A stated or implied nutrition, health or related claim that can be communicated through all mediums including statements, symbols, vignettes, print or electronic media, or other forms of communication and or advertising.

General Health claim

A health claim concerning the general beneficial effects of the consumption of foods or their constituents on health.

Health claims

'Any representation that states, suggests, or implies that a relationship exists between a food or a constituent of that food and health.' (CAC/GL 23-1997)

Health-related ingredient claim

Any representation which states, suggests or implies that a food has particular nutritional properties not related to its energy value or to the content of protein, fat and carbohydrates, vitamins and minerals but related to the content of an ingredient'.

Nutrition claims

'Any representation which states, suggests or implies that a food has particular nutritional properties including but not limited to the energy value and to the content of protein, fat and carbohydrates, as well as the content of vitamins and minerals.'

Nutrition Information Panel (NIP)

A nutrient information panel provides information on the average nutrient content of the seven mandatory nutrients (energy, protein, fat, saturated fat, total carbohydrate, total sugar and sodium) that must be declared on a food label. The NIP also provides information on the product serve size.

Nutrient content claim

'A nutrition claim that describes the level of a nutrient contained in a food [or its energy value]' (CAC/GL 23-1997). [In this taxonomy nutrient content claims include 'Non-addition claims' defined by CAC/GL 23-1997 as 'any claim that a nutrient has not been added to a food, either directly or indirectly. The nutrient is one whose presence or addition is permitted in the food and which consumers would normally expect to find in the food'.]

Nutrient comparative claim

'A [nutrition] claim that compares the nutrient levels and/or energy value of two or more foods.' (CAC/GL 23-1997)

Nutrient and other function claim

Nutrient function claim – 'a health claim that describes the physiological role of the nutrient in growth, development and functions of the body.' (CAC/GL 23-1997) [Although Codex classifies nutrient function claims as nutrition claims it seems more logical to classify them as health claims]. Other function claim – health 'claims concerning specific beneficial effects of the consumption of foods or their constituents, in the context of the total diet on normal functions or biological activities of the body. Such claims relate to a positive contribution to health or to the improvement of a function or to modifying or preserving health.' (CAC/GL 23-1997)

Reduction of disease risk claim

Health 'claims relating the consumption of a food or food constituent, in the context of the total diet, to the reduced risk of developing a disease or health-related condition.' (CAC/GL 23-1997)

ANNEX 1: INFORMAS PROTOCOLS

Terms and Conditions v1.1 May 2017

Contents

The undersigned:
INFORMAS Secretariat (represented by Prof Boyd Swinburn) at the University of Auckland, New Zealand (hereinafter referred to as **INFORMAS Secretariat**).

And

Party interested in using the INFORMAS protocols, hereinafter referred to as **INFORMAS party**. INFORMAS party can be an institution, department, group or individual researcher.

INFORMAS party becomes an **INFORMAS user** after signing this document.

A. Definitions

INFORMAS (International Network for Food and Obesity / non-communicable Diseases Research, Monitoring and Action Support) is a global network of public-interest organisations and researchers that aims to monitor, benchmark and support public and private sector actions to create healthy food environments and reduce obesity and non-communicable diseases (NCDs) and their related inequalities. INFORMAS serves as a capacity building platform for sharing tools, methods, experiences, support and data for monitoring and benchmarking food environments and policies globally and is supported by/seeking support from a wide range of different funding sources.

INFORMAS Secretariat is the INFORMAS core team at the University of Auckland coordinating the INFORMAS globally represented by Professor Boyd Swinburn, INFORMAS Research Fellows and senior secretariat members

INFORMAS Module leader teams are assigned INFORMAS researchers to lead one of the 10 modules within INFORMAS.

INFORMAS researcher is a researcher who belongs to the INFORMAS network, providing input through module leadership or data and analysis contributions and signed the INFORMAS data use and sharing Terms and Conditions.

INFORMAS users are researchers linked to INFORMAS who use INFORMAS protocols and materials and who signed this INFORMAS Protocols Terms and Conditions form.

INFORMAS group is INFORMAS Secretariat and INFORMAS researchers and INFORMAS Module leader teams.

INFORMAS research is projects using (any of) the available INFORMAS resources, methods and / or protocols for data collection and analysis.

INFORMAS resources is the protocols and data collection methods as available on the INFORMAS website (www.informas.org), published in peer reviewed journals and accessible on the INFORMAS Google Drive (where INFORMAS party will receive access to after signing this agreement). This does not cover INFORMAS data which is part of a separate agreement.

INFORMAS user is parties who signed this document and are using INFORMAS protocols or resources, but are not necessarily contributing to or making use of INFORMAS data (this is part of a separate agreement).

B. Aims of the document

Large collaborative projects that include many participants can have unique challenges to determine levels of ownership and contribution. This document therefore aims outline the terms and conditions (i.e., expectations) with regard to the use and sharing of INFORMAS resources. The goal is to facilitate collaboration between researchers (not between institutions).

This is not a legally binding agreement between institutions, but merely a mutual understanding between researchers outlining the expectations relating to INFORMAS. The

INFORMAS party can add additional conditions to this agreement as appropriate (see section C).

After signing this document, the INFORMAS party will become an INFORMAS user and will receive full access to the latest INFORMAS resources as hosted on the INFORMAS Google Drive.

In the first instance, INFORMAS Secretariat aims to work with one contact person for each INFORMAS party. This agreement will need to be signed by that contact person, but please also provide contact details for other researchers in your INFORMAS party so we contact you in case the contact person leaves.

The main goals of this agreement are to:

- Safeguard consistency of INFORMAS resources (e.g., protocols and data collection method)s within and between different countries (for example to allow multi-country analysis)
- Safeguard the quality of INFORMAS resources (e.g., protocols and the collected data)
- Safeguard version management for INFORMAS resources (e.g., protocols, databases and publications)
- Encourage collaboration between INFORMAS researchers who are using INFORMAS resources.

1. General Principles

- **Copyleft**: The INFORMAS research follows the principle of 'copyleft' where INFORMAS researchers receiving INFORMAS resources have the same rights for using and sharing INFORMAS resources as the authors of the original documents and INFORMAS Secretariat, with the condition that they follow the same copyleft principles when distributing the work
- **Reciprocity:** The INFORMAS research follows the principle of 'reciprocity' where there is expected mutual benefits from contributing and sharing to INFORMAS research. Here it is expected that when the INFORMAS party or INFORMAS researcher benefits from the INFORMAS resources, they repay by contributing resources and skills of their own.

This document does *not* relate to any financial agreements between institutions (e.g., when you pay or get paid to use particular INFORMAS resources) which will need to be covered in separate agreements.

2. General terms and conditions

By signing this document, you agree to:

- Adhere to the INFORMAS resources as outlined in each document
- The INFORMAS party communicates with INFORMAS Secretariat about any changes they (are planning to) make to the INFORMAS resources (e.g., when they adapt a protocol for their own country or for a specific setting) and share the final protocol within the INFORMAS group (which can be in the INFORMAS party's own language)
    - INFORMAS party is free to publish their (adapted versions of the) protocol, following the INFORMAS Publications and Authorship Terms and Conditions. Publication can be in an open access or regular journal as long as the INFORMAS party shares the protocol within the INFORMAS group.
- The data the INFORMAS party collects using the INFORMAS resources will be owned by the INFORMAS party. However, there is an expectation that the INFORMAS party shares the cleaned data with the INFORMAS group (i.e., copyleft principle). For further details please refer to the INFORMAS Data Use & Sharing Terms & Conditions.
- Not share INFORMAS resources outside your INFORMAS party without informing the INFORMAS group.
- Agree to the principles as outlined in the INFORMAS Publications and Authorship Terms and Conditions
- Not directly or indirectly exploit the INFORMAS resources in any way for the INFORMAS party his/her own or any other person's benefit, profit or advantage.
- Have in place adequate security measures to protect any Personal Information and Confidential Information against unauthorised access, modification, use, disclosure or loss.
- Agree to the copyleft principles.

C. Additional conditions

INFORMAS party can specific terms and conditions here for use of their data by INFORMAS if applicable.

D. Please provide the following details:

a. INFORMAS party contact person name:
b. Institution:
c. Country:
d. Email address:
e. IFORMAS party involved researchers
    i. Researcher name 1:

ii. Researcher institution 1:
iii. Researcher email 1:
iv. Researcher name 2:
v. Researcher institution 2:
vi. Researcher email 2:
vii. Researcher name 3:
viii. Researcher institution 3:
ix. Researcher email 3:
x. Please expand as necessary

f. INFORMAS modules you are most interested in:
- ☐ Public sector policies and actions
- ☐ Private sector policies and actions
- ☐ Food composition
- ☐ Food labelling
- ☐ Food promotion
- ☐ Food provision
- ☐ Food retail
- ☐ Food prices
- ☐ Food trade and investment
- ☐ Population diet

E. Signatures

INFORMAS Secretariat

Prof Boyd Swinburn

Date:

Signature:

INFORMAS party

Name:

Date:

Signature: