Review of ‘front of pack’ nutrition schemes

European Heart Network

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This report was prepared for the European Heart Network (EHN) by Lynn Stockley. The main part of the review was completed in May 2006. However, this is a rapidly evolving area of work and Appendix 1 describes some initiatives that have been published since the date of the original review. The recommendations, set out in the beginning of the report are based on the information presented in this report and to the findings of the systematic review of the research on consumer understanding of nutrition labelling which EHN published in 2003.

The European Heart Network (EHN) is a Brussels-based alliance of heart foundations and other concerned non-governmental organisations throughout Europe. EHN has 30 member organisations in 26 countries.

The European Heart Network plays a leading role in the prevention and reduction of cardiovascular disease through advocacy, networking and education so that it is no longer a major cause of premature death and disability throughout Europe.

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- Northern Ireland Chest Heart and Stroke (UK)
- Norwegian Association of Heart and Lung Patients (LHL)
- Portuguese Heart Foundation
- Slovakian Heart to Heart League
- Slovenian Heart Foundation
- Spanish Heart Foundation
- Swedish Heart Lung Foundation
- Swiss Heart Foundation
- Turkish Heart Foundation

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RECOMMENDATIONS

The European Heart Network (EHN) considered the work which has been done in developing and researching approaches to nutrition labelling, and which has been described in the EHN commissioned systematic review of the consumer perception of nutrition labelling [1], and a review of 'front of pack' nutrition schemes[2]. These include the research findings which are referred to in this position paper.

EHN has agreed several important over-arching principles. These are:

A front of pack nutrition scheme should be developed as part of the EC's amended nutrition labelling proposals. This should be in addition to nutrition labelling on the back of pack. Both front of pack and back of pack information should:

- be mandatory
- apply to the vast majority of packaged foods, including packaged foods in catering outlets
- for unwrapped food, nutritional information should be available in proximity to the food, on the internet or elsewhere as appropriate
- provide information in a format which has been demonstrated to be helpful to consumers
- be consistent with each other, but the 'front of pack' information in particular should be presented in a format which is simple and quick to use for a wide range of consumers with different literacy and numeracy skills.
- be embedded in broader educational initiatives

EHN considered back of pack (BoP) and front of pack (FoP) labelling in turn. A systematic framework was used to develop an EHN position on nutrition labelling, with the goal of advocating a scheme that would be both useful for consumers and support public health nutrition targets.

Back of pack nutrition labelling

What is the main purpose of back of pack labelling?

The ideal format for back of nutrition labelling (both BoP and FoP) depends on what it needs to be used for. The main tasks which have been identified though research into consumer use of nutrition labelling are to help people:

a) assess the nutrient levels of individual products
b) assess the 'healthiness' of individual products in the context of the overall diet
c) compare the nutrient levels of different products
d) compare the 'healthiness' of different products

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[1] Cowburn G & Stockley L (2003) A systematic review of the research on consumer understanding of food labelling. European Heart Foundation, Brussels.
Cowburn G & Stockley L (2005): Consumer understanding and use of nutrition labelling: a systematic review. *Public Health Nutr* **8**, 21-28

[2] Stockley, L (2006) Review of 'front of pack' nutrition schemes. European Heart Network, Brussels.

There are different 'users' for BoP and FoP labelling, with the former more likely to be used by interested and informed consumers, including those with special dietary needs.

Labelling could in principle help people with all of the tasks listed above but currently does not do so. The format for BoP nutrition labelling, currently prescribed by the EU Directive, is designed primarily to help people with task c) i.e. to compare the nutrient levels of different products.

The EHN's position is that BoP nutrition labelling should support all of the four main purposes of labelling, but that in particular it should help consumers compare the nutrient levels of different products, and assess the nutrient levels of individual products.

What nutrients should be included in back of pack labelling?

Research shows that although consumers' actual use of labels is lower than perceived use, the most commonly 'looked at' nutrients are calories, fat and sugars. Information on e.g. protein may also be used to compare the quality of products. Motivated consumers with particular health needs will search for information on specific nutrients.

With this in mind EHN supports the mandatory inclusion of information about energy, protein, carbohydrate, fat, saturated fat, sugars, fibre and sodium.

However, in line with public health concerns there is a strong case for sugars to be specified as 'added sugars', and 'trans fats' to be an additional item.

Since research also shows that consumers are not confident about the relationship between sodium and salt, sodium information should additionally be shown as 'salt equivalents'.

The final EHN position is that there should be mandatory back of pack labelling for energy, protein, carbohydrate, added sugars, fibre, fat, saturated fat, trans fat, sodium and its salt equivalent.

Should nutrient levels be provided numerically, verbally or graphically?

BoP generally provides more space for information than FoP but even so space is not unlimited. If BoP labelling is to be tabular, there is only space for two or three columns.

The main options for providing nutrient levels numerically are:

a) per 100g
b) per serving
c) as a percentage of a reference value in a 100g of the food
d) as a percentage of a reference value in a serving of the food

The reference values are called Daily Values in the US and are now generally called Guideline Daily Amounts (GDAs) in Europe. Some BoP labelling gives the actual GDA (rather than a percentage of the GDA in a given amount of the food). It sometimes gives separate GDAs for men and women and even GDAs for children.

The main option for providing nutrient levels verbally is using words such as high, medium or low. There are also various options for graphical labelling, but research indicates that consumers both prefer, and are better able to use, colour coding (generally red, amber and green) to signal high, medium and low levels of different nutrients.

BoP nutrition labelling often provides information in more than one form e.g. per 100g and per serving; per 100g and per serving and with words; per 100g and per serving and as a percentage of the GDA and with colour coding.

Per 100g information is useful for consumers in comparing products; per serving information is useful in assessing the nutrient content of individual products; percentage of GDA is useful in assessing the nutritional contribution of a product to daily recommended amounts of nutrients; and colour coding can be used to help interpret whether this contribution is high, medium or low.

The EHN therefore supports the mandatory inclusion of information in all of these formats in back of pack labelling. This would be possible if a three column nutrition label is used, with information per 100g, per serving, and percentage of GDA per serving. Colour coding in a way which has meaning for consumers should then be applied along each relevant row, in order to indicate whether the nutrient levels in a product are high, medium or low as a percentage of the GDA per serving.

(See figure 1 for illustration)

At present in Europe, serving size is defined by the manufacturer. This differs from other parts of the world, e.g. the USA, where standard serving sizes have been developed and are used for the purposes of calculating percentage of Daily Value (equivalent to GDA) on food labels. This enables consumers to compare the nutrient contribution of different products to GDAs

EHN therefore recommends that standard serving sizes should be used for back of pack labelling, but where food is packaged and sold as a serving, actual serving size, rather than standard serving size, should form the basis for the information.

The development of standard serving sizes along with the development of European GDAs, and other key issues, are addressed later in this paper.

Front of pack labelling

What is the main purpose of front of pack labelling?

Again the ideal format for FoP nutrition labelling depends on what it needs to be used for, and again the main tasks which have been identified though research into consumer use of nutrition labelling are to help people:

a) assess the nutrient levels of individual products
b) assess the 'healthiness' of individual products in the context of the overall diet
c) compare the nutrient levels of different products
d) compare the 'healthiness' of different products

An important differentiator with BoP labelling is that FoP schemes are intended to be understood and used easily and quickly by as many consumers as possible, including those with lower literacy and numeracy rates.

Identifying the main purpose of FoP schemes is a particularly important issue, since different simplified labelling formats perform differently for these tasks.
The research which has been carried out indicates that although 'healthy eating logo' schemes which integrate information about several nutrients are simple, consumers prefer to have information about key nutrients, which means that they can make decisions which relate to their own circumstances.

The EHN's position is that mandatory, clearly visible, FoP nutrition labelling should be developed for selected nutrients. The main purposes of this would be to help as many consumers as possible, quickly and easily assess the 'healthiness' of individual products in the context of the overall diet and compare nutrient levels in different products. This would not preclude the voluntary presentation of guideline daily amounts or healthy eating logos on the front of the pack.

What nutrients should be included in front of pack labelling?

As with BoP labelling there are many nutrients that could be included, but there needs to be a limited number if the labelling is to be helpful.

EHN's position is that there should be no more than four nutrients represented on FoP, and that those which reflect consumer interest and the public health agenda are: energy, saturated (including trans) fat, salt equivalents, added sugars.

Should nutrient levels be provided numerically, verbally or graphically?

The arguments are the same as those provided in the BoP section previously, but in addition FoP labelling needs to be simple and quick for consumers to understand. This means that there should be as few numbers used as possible. Research has shown very clearly that consumer's ability to interpret nutrition information decreases with the complexity of the task.

For BoP labelling, EHN supports provision of information on percentage GDA per serving, with colour coding to indicate whether the nutrient levels in a product are high, medium or low as a percentage of the GDA per serving.

A FoP scheme should be consistent with this, and use the same basis (percentage GDA per serving) and banding criteria, as the BoP labelling. EHN recognises that this means that there will be inconsistency between the boundary for the 'low' band and the levels of nutrients prescribed in the draft regulations on nutrition claims.[3] However, the purposes for which consumers want to use front of pack schemes include assessing the 'healthiness' of individual products in the context of the overall diet, and this is best served by developing a banding scheme based on percentage GDAs per serving.

EHN supports the development of banding criteria which apply across all foods to help consumers make choices across all categories of foods e.g. fruit rather than

[3] OJ L 12, 18.1.2007, p. 3

crisps, yoghurt rather than cake. EHN acknowledges the value of a FoP nutrition labelling scheme which, if it had category-specific criteria, might be able better to help consumers choose within categories of foods e.g. breads, spreads, cheeses, etc. But, a scheme with criteria that apply across all foods would be simpler to implement because of the difficulties in defining food categories – in particular at a European level.

EHN notes that some national 'healthy eating logo' food category specific schemes are well established, and could be used additionally on a voluntary basis to help consumers make choices within food categories.

As mentioned previously, the format which is most liked and best used by consumers is colour coding, and the EHN supports this, together with the option of using words such as high, medium and low.

The EHN's final position is that mandatory FoP labelling should be a banding scheme for key nutrients, based on percentage GDAs per serving, and which applies across all foods. The bands should be colour coded, with the additional option of using words.

(See figure 1 for illustration)

Other key issues which will need to be addressed

1. In order to develop a system of the type advocated by EHN it would be necessary for the EU to develop:

- standard serving sizes for regulatory use
- European wide GDA's.
- banding boundaries for percentage of GDA per serving which could be described as high, medium or low
- agreed definitions (including analytical and calculation approaches) for all nine of the nutrients identified for mandatory labelling on back of pack

These tasks should be carried out as a matter of urgency.

2. Further research is necessary across Europe, including monitoring the effects of systems on consumer purchases. This would involve a system for collecting comparable sales data from a variety of outlets.

Figure 1: Sample labels for pizza[4]

Nutrition Information			
	per 100g	**per serving**	**% GDA per serving**
Energy	836 kJ 198 kcal	1003 kJ 238 kcal	 11%
Protein	10.0 g	12.0 g	24%
Carbohydrate	28.3 g	34.0 g	13%
of which			
Added sugars	1.6 g	1.9 g	3%
Fat	5.0 g	6.0 g	7%
of which			
Saturated fat	2.2 g	2.6 g	10%
Trans fat	0.03 g	0.04 g	1%
Fibre	1.7 g	2.0 g	11%
Sodium	0.4 g	0.5 g	22%
Salt equivalents	0.8 g	1.0 g	22%

Energy	Medium
Added Sugars	Low
Saturated/Trans fat	Medium
Salt	High

[4] GDAs are those used in Great Britain for nutrient profiling. They are GDAs fro an average adult consumer

SUMMARY

Background

The purpose of this review was to gain insights into the extent to which 'front of pack' schemes are used, the way in which such schemes might operate; presentational issues (i.e. the format e.g. traffic lights, descriptive words, symbols); the nutritional criteria used; and whether there has been any developmental research or evaluation.

The main part of this review was completed in May 2006. However, this is a rapidly evolving area of work, and Appendix 1 describes some initiatives that have been published since the date of the original review.

Only one systematic review of consumer perception of food labelling has been carried out (Cowburn & Stockley, 2005). This suggests that consumers do look at 'back of pack' nutrition information on labels, and can understand some of the terms used but are confused by others. Most appear to be able to retrieve simple information and make simple calculations and comparisons between products using numerical information, but their ability to accurately interpret the nutrition label is reduced as the complexity of the tasks increase. Consumers seemed to find it particularly difficult to use nutrition label information to place an individual product into the context of their overall diet. Using some kind of benchmark helped consumers make this kind of judgement.

Over the last 15 years there has been a slow move towards interpretative 'front of pack schemes. Some manufacturers have begun to use interpretative numerical information on the front of packs, for example comparison of the nutrient content of the food with guideline daily amounts. However, this review focuses on the two main approaches which have been developed, and which use simple verbal or visual formats (e.g. words like HIGH –MEDIUM-LOW, or symbols, or traffic lights) Research comparing these with numerical schemes has been included where relevant. The terminology used in relation to this aspect of labelling is not well established, and the terms which are used to describe the two main approaches in this report are as follows:

1. '**Banding'** (also called '**nutrient signposting')** schemes are often applied to specific nutrients e.g. an indication of fat level, and an indication of salt level, and an indication of sugar level. Some schemes have also been developed and tested, which integrate information about different nutrients to give an overall score that can be used to 'band' the food. A characteristic of all banding schemes is that they are designed to be comprehensive i.e. to indicate levels in as many foods as possible.

2. In contrast, '**Point of purchase'** (also called **'integrative'**) schemes only indicate those foods that are the 'healthy'' or 'healthier' choices, and provide integrated information about a range of nutrients, usually by the use of a logo. i.e. these schemes are often only used in a positive way, and are not comprehensive

Key findings

Research findings: BEUC, the European Consumers' Organisation, carried out a survey in 5 European countries in 2005. 77% of those who believed that nutrition labelling should be improved wanted to see an indicator on food packaging to highlight its nutritional quality, for example a simplified labelling system indicating whether fat, sugar, or salt levels are high, medium or low. Even those people who said they were not interested in nutrition expressed a preference for this type of simplified labelling system. (BEUC 2005). Similarly, research by the European Food Information Council (European Food Information Council, 2004) indicated the need for simple, easy to use information, and warned against providing more numbers. Several Member States have undertaken research with consumers on their needs in relation to nutrition labelling, and as a result some are working to develop simpler systems to be used on the front of pack (Council of the European Union, 2005). The United Kingdom in particular has undertaken extensive research, including testing different formats such as comparing the numerical guideline daily amounts with 'multiple' traffic lights (i.e. a traffic light for each of the selected nutrient). The traffic light system performed best in helping consumers make healthier choices (Food Standards Agency, 2006).

The systematic review mentioned earlier (Cowburn & Stockley, 2005) and other sources identified in this Report, indicate that consumers prefer fee-free schemes run by credible and authoritative sources, which include clear guidance about how the schemes are intended to be used

Details of individual schemes: Appendix 2 of this Report summarises the non-commercial schemes that were identified. Commercial schemes have not been described in detail in this review because: they are numerous; can be ephemeral; their underpinning criteria are often not always publicly available; and the criteria can change from year to year. However, some examples are provided in Appendix 3.

Banding vs point of purchase schemes: This review found more point of purchase than banding approaches. Feedback from European Heart Network members indicates that this may be largely because it is easier to work with industry on schemes that focus on positive promotion of certain foods, rather than schemes that comprehensively cover all foods.

Parameters for schemes: The banding and point of purchase schemes identified in this review have used a mixture of 'food category specific' (i.e. criteria which apply to foods within specific food categories) and 'across the board' nutrition criteria (i.e. criteria which apply across all foods and categories). All of the schemes which were identified used models which set threshold points for levels of nutrients which define whether products are or are not eligible for the scheme. The most commonly used nutrients for which criteria were set, were total fat, saturated fat, fibre, total or added sugars, and sodium.

National government schemes: The most established government backed scheme is the Green Keyhole in Sweden, which is a point of purchase approach that has been running since 1989. Recently the Food Standards Agency in the UK has invested in a research programme to test consumer acceptability and the effectiveness of different

front of pack approaches. It has recommended the use of a three level banding scheme, indicated by four 'traffic lights', one for each of four nutrients (fat, saturated fat, total sugar, and salt). The levels for the different bands are, where relevant, based on the current EU proposal on Nutrition and Health claims, so that the scheme is compatible with proposed legislation. Governments of several other Member States are actively developing or evaluating schemes.

Non-governmental organisations: NGOs, particularly those concerned with heart health, have been in the lead in developing 'front of pack schemes'. Points of purchase schemes of this type exist in Australia and New Zealand, Canada, Finland, Slovenia, and the USA. Several of these have to charge a fee to participating companies to cover their costs, but this results in self selected participation by companies and cynicism on the part of some consumers has been reported.

One heart health charity in the UK, the Coronary Prevention Group, systematically developed a banding scheme based on dietary recommendations, and using verbal indicators (Low, Medium Low, Medium High, and High). This has been adapted by, at least one retailer, for its own banding scheme.

Food industry: Point of purchase schemes are widely used by retailers and some manufacturers in many European countries, and are often called 'healthy living' brands. There is little consistency between the schemes, so a consumer can purchase a product which is indicated as 'healthy' in one outlet, but the same product would not qualify in another outlet. Retailers and manufacturers use banding approaches less widely. There has been a move in the commercial sector to providing 'front of pack' numerical information showing the nutritional contribution of products to guideline daily amounts.

1 Background

1.1 Introduction

In 2002 the European Heart Network (EHN) commissioned a systematic review of nutrition labelling in order to inform its policy position. The review focused on published and unpublished research into consumer understanding of nutrition labelling, applicable to a European setting. The results were published as both an EHN report (Cowburn & Stockley, 2003), and as a scientific paper in a peer reviewed journal (Cowburn & Stockley, 2005)

103 papers were identified that reported on consumer understanding or use of nutrition labelling, most originating from North America or northern Europe. Only a few studies (9%) were judged to be of high or medium high quality. Reported use of nutrition labels by consumers was high but more objective measures suggested that actual use of nutrition labelling during food purchase may be much lower. Whether or not consumers can understand and use nutrition labelling depends on the purpose of the task. Available evidence suggests that consumers who do look at nutrition labels can understand some of the terms used but are confused by other types of information. Most appear to be able to retrieve simple information and make simple calculations and comparisons between products using numerical information, but their ability to accurately interpret the nutrition label reduced as the complexity of the tasks increase. The addition of interpretational aids like verbal descriptors and recommended reference values helps in product comparison and in putting products into a total diet context. Overall it was concluded that improvements in nutrition labelling could make a small but important contribution towards making the existing point-of-purchase environment more conducive to the selection of healthy choices. In particular, interpretational aids can help consumers assess the nutrient contribution of specific foods to the overall diet.

In January 2003, the Commission launched a consultation among Member States and stakeholders with a view to preparing a proposal amending Council Directive N° 90/496/EEC on nutrition labelling. The overall objective for this revision is stated to be ‘to improve the existing nutrition labelling rules in order to facilitate consumer understanding and informed choice’. It is expected that the Commission will present a proposal for an amended nutrition labelling Directive, probably not before 2007.

1.2 Types of ‘front of pack’ schemes included

The earlier EHN review indicated the potential usefulness for consumers of labelling schemes which ‘interpreted’ nutritional information. One such approach which is being discussed, and actively investigated in some countries, is the use of **banding (**also called **‘nutrient signposting)** on labels to indicate different levels of nutrients. Some schemes have also been developed and tested, which integrate information about different nutrients to give an overall score that can be used to ‘band’ the food. These levels can be represented using various formats e.g. by words e.g. HIGH or MEDIUM or LOW, or by visual representations e.g. RED or AMBER or GREEN. A

characteristic of ‘banding’ and similar schemes is that they are designed to be comprehensive i.e. to indicate levels in as many foods as possible, spanning the range of possible nutrient content. The schemes thus differ from nutrient content claims that indicate only one level e.g. low in fat, high in fibre. However, the levels for nutrient content claims may be used as one or more of the banding criteria.

Another type of scheme is often called a **'point of purchase'** initiative (sometimes called an **‘integrative’** approach). The key difference between this type of scheme and the ‘banding’ approach is that point of purchase schemes usually only indicate those foods which are the ‘healthy’ or ‘healthier’ choice, and that they provide integrated information about a range of nutrients. Each nutrient can, of course, be defined by very similar nutrient criteria to one of the bands in a banding scheme. Point of purchase schemes generally use a logo to indicate ‘healthy’ or ‘healthier’ foods, for example a heart or a tick.

The purpose of this review was to gain insights into the extent to which interpretative ‘front of pack’ approaches have already been used, current proposals, the way in which such schemes might operate, presentation (i.e. the format e.g. traffic lights, descriptive words, symbols), the criteria used, and whether there has been any developmental research or evaluation.

There has recently been a move by some manufacturers and retailers to place interpretative numerical information on the front of packs whereas previously it had appeared on the back e.g. a comparison of the product with guideline daily amounts. Research on this approach has been described in the relevant sections, where appropriate.

1.3 Key components of ‘front of pack’ schemes

Recently there has been a great deal of interest in ‘nutrient profiling’, which it is suggested can be defined as ‘the science of categorising foods according to their nutritional composition’ (Scarborough *et al.*, in press). Banding and point of purchase schemes use nutrient profiling as their basis, and it is appropriate to consider their components against those proposed by Scarborough et al. These are:

1. the purpose of the scheme
2. the group or population the purpose is relevant to
3. whether food category specific or across-the-board criteria are used
4. which nutrients and other food components are included
5. which base or combination of bases (e.g. per 100g, per serving or per 100kJ) should be used?
6. the type of model used (e.g. one using a‘threshold’ for nutrient/food criteria, or one which allocates ‘scores’ to different levels of nutrient/food criteria and integrates these scores into a final number. This number is then compared with cut off points for acceptability)
7. the basis of the numbers used for the criteria, and the numerical criteria themselves.

In the case of banding and point of purchase schemes, the first component – the purpose – is to interpret nutrition labelling so that consumers find it easier to use in

interpreting the nutritional contribution of a food to their overall diet. The second component – the group or population – is almost invariably the general population. The remaining 5 components differ with different schemes, and will be used as a basis for analysing the schemes identified in this review, together with the format (presentation) of the scheme.

1.4 Aims and Objectives

1.4.1 Aims

To carry out a review of unpublished and published literature and web based information, covering nutrition banding and point of purchase schemes on labels which present information on levels of nutrients within foods. The review is not systematic, but aims to collect and look in-depth at all available information relevant to the European situation.

1.4.2 Objectives

- to assess the extent to which the banding and point of purchase approaches have already been used, either on the front of food labels or with the potential for use on front of pack, and provide examples if possible
- to collect information about relevant work in progress
- to present information on how schemes might operate, for example on which nutrient or combinations of nutrients, whether the same numerical basis would apply across all food categories, or differ with specific food categories
- to collect information on possible presentations of schemes
- to present any relevant developmental or evaluation data which is identified in the course of the review

2 Methodology

2.1 Scope of the review:

The review included information from the USA, Canada, Australia, and New Zealand, as well as European countries. Only information available in English was included.

2.2 Web based searches

The websites for relevant government agencies from the regions listed above were searched, along with those for relevant international organisations.

A 'Google' search was carried out using the following terms:-

> (nutrition OR food) AND (label OR labelling OR labeling) AND (banding OR signposting OR "point of purchase" OR "front of pack" OR "traffic lights").

Additional searches were subsequently carried out for:-

> "food information" AND (program OR programmes)
>
> "food approval" AND (program OR programmes)

2.3 Literature searches

These were carried out on a personally held database, in PubMed, and using CABI. Searches were made for information published since 2000, although some key documents predating this were also included.

2.4 Contacts in Europe

EHN member organisations and contacts were asked whether they were aware of relevant initiatives in their country or neighbouring countries, and to provide any information or leads where possible.

3 Results

The results are presented by region: Europe, North America, and Australia/New Zealand. Within each of these, relevant work on banding and point of purchase schemes is described. As well as being described in the text, the key components of specific schemes are summarised in Appendix 2.

The first section summarises the findings of relevant systematic and literature reviews.

3.1 Reviews of front of pack schemes

There has only been one systematic review which covers this area, and this explored published and unpublished research into consumer understanding and use of nutrition labelling which is culturally applicable in Europe (Cowburn & Stockley, 2005). A general summary of the review is given in Section 2.1

The review compared the use of numerical and non-numerical approaches. Fifty five studies were identified which assessed whether consumers could use nutrition information which was presented either numerically (used as the standard format in many countries) or non-numerically (which interprets numerical information either verbally or graphically, in a form which could potentially be used on the front of food packs).

Consumers were generally better able to judge the overall healthiness of a product when some form of benchmark was present. Although some studies assessed numerical presentations such as daily reference values alongside verbal and graphical presentations, no clear consensus emerged about the most useful format for the presentation of reference information. There was some evidence that consumers with higher levels of nutrition label knowledge may find reference information more useful in assessing the healthiness of a product than those consumers with less knowledge.

Consumers were found to be able to use 'back of pack' numerical data accurately to make simple comparisons between products. The addition of numerical or non-numerical interpretational aids appeared to increase accuracy of product comparison. Several studies concluded that the use of benchmarks was helpful. Some studies suggested that verbal banding information should be presented alongside numerical information, as consumers (in particular those interested in nutrition and health) used verbal banding to detect large differences between products and referred to numerical information for precision. Other types of non-numerical information such as bar-charts, star ratings and pie charts seemed more confusing to consumers than verbal banding, although some consumers were able to interpret bar-charts more accurately than numerical information.

Consumers seemed to find it particularly difficult to use 'back of pack' nutrition label information to place an individual product into the context of their overall diet. Adding some kind of 'back of pack' or 'front of pack' benchmark, either in a numerical (such as the percentage of dietary reference values which is used in the USA, or guideline daily amounts used on a voluntary basis in the UK) or non-numerical format seemed to help consumers make this kind of judgement. Of the non-

numerical labelling systems which have been tested, consumers prefer bar charts but were more accurate when using verbal descriptors in more objective tests of label use.

The review also included findings from 'healthy logo' (**point of purchase**) schemes. 10 relevant studies were identified. The authors' main conclusions were that consumers generally appeared to recognise the logos, but there was sometimes confusion about their purpose, and there was general concern from consumers about how such schemes were organised. There was a preference for schemes run by a credible and authoritative source, which included clear guidance about how the schemes are intended to be used (Cowburn & Stockley, 2003).

A peer reviewed experimental paper, published subsequently to the systematic review described above, tested different ways of displaying nutrition labelling to help with consumer decision-making (Marino & Mahan, 2005). The overall conclusion was that the nutrition display needed to be tailored to reflect the ways in which consumers wanted to use it, and if this was done ease of use could be improved.

3.2 Europe

3.2.1 Europe wide research

Some research was identified which was applicable across all the countries of Europe.

1. A qualitative evaluation of food labelling legislation was commissioned by the European Commission (The European Evaluation Consortium (TEEC), 2003). A range of issues relating to nutrition labelling were investigated, including consumer satisfaction with the presentation of information. It was noted that there was a high level of consumer interest in nutrition labelling, and it was also noted that "High, medium, low fat and sugar indicators are not appropriate for all products". Unfortunately, there is insufficient detail given in the report to assess whether this means that such indicators would be appropriate for some products, and if so which.

2. In 2003, the European Food Information Council (European Food Information Council, 2004) carried out desk research on consumer understanding of nutrition labelling and concluded that there is scant multi country data and it is especially lacking from Southern Europe. There is also little research on:

- consumer motivation to read labels
- possible interventions to increase motivation and usage especially from "non users"
- relationship between label reading and food intake
- total nutrition/healthy lifestyle communication programmes

In the light of this, additional qualitative research was carried out with consumers from France, Germany, Italy and the UK. This found that:

- more work needs to be done to make the nutrition label a useful tool for consumers and to motivate them to read the information. More figures, longer lists, denser information will not have the desired effect.

- consumers need a manageable reference, endorsed by a suitably trustworthy authority. They need information that is simple, easy to use and relates to their daily nutritional needs.
- consumers want nutrition to be a part of their daily lives. Most importantly they need greater knowledge in order to make use of the nutrition label and to integrate this information into their daily dietary management

3. The European Consumers Organisation, BEUC, commissioned a survey which was conducted in five European countries: Germany, Denmark, Spain, Hungary and Poland. 600 people were interviewed in each country (BEUC, 2005a). 77% of those who believed that nutrition labelling should be improved wanted to see an indicator on food packaging to highlight its nutritional quality, for example a simplified labelling system indicating whether fat, sugar, or salt levels are high, medium or low. Even those people who said they were not interested in nutrition, expressed a preference for this type of simplified labelling system. As a consequence BEUC has recommended that a simplified labelling scheme should be developed as part of the EC review of the nutrition labelling directive (BEUC,, 2005b). This would include putting nutrition information into context by indicating whether or not a product is high, medium or low in key nutrients.

4. In November 2005 the UK presidency of the EU convened a meeting between Member States to exchange views on nutrition labelling (Council of the European Union, 2005). Twelve Member States described consumer research, including support for consumers in several Member States for simplified labelling formats. Five Member States are considering, or working to develop, front of pack labelling or logo schemes.

3.2.2 Banding schemes

Currently BEUC is working to develop a simplified labelling scheme which could be used consistently in all countries of the **European Union**. The parameters for the model are:

- It should be based on available consumer research and agreed scientific criteria as to what is the most useful and easy to understand for consumers;
- The relevant simplified information should be on the front of pack or label, in addition to a nutrition information panel elsewhere on the pack;
- It should enable consumers easily to make comparisons between different products within a food category, as well as across food categories;
- It should be used consistently across all products in order to avoid confusion;
- It should be applicable EU-wide;
- It should provide a basis for developing consumer education, and improving nutritional choices as part of the wider series of actions to promote better health choices and to combat diet related diseases;
- While intended in the first place for pre-packaged foods, it should ideally be adaptable for use in catering.

Further information can be found at http://www.beuc.org/.

However, most initiatives have been, or are being, developed within Member States.

Retailers in some European countries appear to be using banding approaches. For example, in Sweden one of the large supermarkets has a particular range where products carry circles in different colours, marking how much salt, sugar, and fat each product contains. (EHN member communication)

In **Switzerland**, the Swiss Federal Office of Public Health is exploring various options for food labelling, including improving the understandability of nutrition labelling, and possibly using symbols or colours (EHN member communication).

In **France** the French authorities are evaluating two schemes, and the system that will finally be chosen will be additional to current labelling requirements. The results of this study are expected to be published in Summer 2006 (BEUC, 2006).

In the **Netherlands**, the Netherlands Nutrition Centre, which is funded by the Ministries of Agriculture and Public Health, has developed a scheme to help consumers compare the nutritional quality of food and make 'healthy choices' within food categories (Netherlands Nutrition Centre, 2005). The scheme is intended to be used in nutrition education, product development, and supporting legislation. The 'levels' of foods within categories are referred to as 'preferable' (products which are helpful in achieving a healthy diet); 'middle course'(products which are neutral in achieving a healthy diet); and 'acceptable' (products which are unhelpful in achieving a healthy diet). The criteria are shown in Appendix 4.

The **UK** has a long history of developing banding schemes. The Coronary Prevention Group proposed the first of these in the 1980s. This scheme has been revised several times since then, and is currently used by one of the major retailers in the UK. A full history of this scheme is provided in Appendix 3 of (Rayner *et al.*, 2004a). The original concept for the scheme, and its use up until now, has been for 'back of pack' labelling. It is included in this review because of the potential for the approach to be adapted for 'front of pack' use, for example in developing 'traffic lights' for single nutrients. The original quantitative nutrition criteria for the bands were based upon World Health Organization dietary recommendations, and the most recent revision takes account of the most up-to-date recommendations from the UK. Details of the original version and the overall approach are given in Appendix 2. Appendix 5 contains provides details of the most recent revision, currently in use in the UK.

In 1996 the UK's Food Standards Agency published a leaflet called Use Your Label (Williams *et al.*, 1996). This introduced two new concepts. The first was that of Guideline Daily Amounts (GDA), which expressed dietary recommendations in terms which are more easily understandable for consumers. For example the Guideline Daily Amount of fat for a man is 95g and that for a woman 70g. Guideline Daily Amounts provide a benchmark against which consumers can assess the nutrient contribution of foods against their daily dietary needs. This concept has continued to be developed, for example by the Institute of Grocery Distribution (Institute of Grocery Distribution, 1998), and various retailers who have developed GDAs for additional nutrients. GDAs are now being used on front of pack by some manufacturers.

The second concept was the development of rules of thumb for what counts as ‘a lot’ or ‘a little’ of fat, saturated fat, sodium, fibre and sugar. The amounts which constituted ‘a lot’ or ‘a little’ were themselves derived from the GDAs. More information about the development of these concepts is provided in (Rayner *et al.*, 2004b). A summary of the nutritional criteria for what constitutes ‘a lot’ and a little is given in Appendix 2.

Concern about levels of obesity in the UK has continued to grow, as it has in many European countries. In 2004, a House of Commons Health Select Committee report on obesity recommended that “The Government introduces legislation to effect a ‘traffic light’ system for labelling foods, either ‘red – high’, ‘amber – medium’ or ‘green – low’ (House of Commons Health Committee, 2004). A Government White Paper on Public Health also contained a commitment that by early 2006, there should be a clear, straightforward food coding system in common use, which helps busy people understand at a glance which foods can make a positive contribution to a healthy diet, and which are recommended to be eaten only in moderation or sparingly (Government, 2004).

In the light of this, the Food Standards Agency in the UK commissioned a programme of research to inform the development of such a food coding system, which it refers to as ‘food signposting’, in November 2004. Detailed information is available on http://www.food.gov.uk./

To summarise the programme, in November 2004 the first phase of research was published. This demonstrated strong approval and support for the idea of front-of-pack signpost labelling, which people felt would make it easier to assess the nutritional content of foods and make healthier choices. This research identified two concepts as particularly promising. One was a ‘simple traffic light system’, which combined the main nutrients into a single measure and could be depicted as red (for less healthy choice), amber (for OK choice) or green (healthier choice). The other was a ‘multiple traffic lights’ concept, which showed separate information for the total fat, saturated fat, sugar and salt content.

The Agency then commissioned research to test these concepts in more detail, together with two concepts based on Guideline Daily Amount (GDA) information. To ensure that the two GDA-based formats included in the research would be as clear as possible, the Agency commissioned qualitative consumer research to examine those elements from a range of five GDA-based options that consumers found most useful. The research, which was published in March 2005, tested formats with and without colour coding, and with simple bar charts, to establish which of them consumers found most useful.

Subsequent research, published in November 2005, was based on interviews with more than 2,600 consumers from across the UK. The research looked at which type of signposting was most effective in helping people assess the nutrient content of food quickly and easily, both when looking at a product on its own, and when comparing products. The research also examined attitudes to signposting, including which format of signposting people prefer and why. Further focus group research looked at possible improvements to the two formats that had performed best in previous research – ‘multiple traffic lights’ (MTL) and ‘colour-coded Guideline Daily Amounts’

(CCGDA). On the basis of these research findings, the MTL format was considered to be the one most likely to help consumers make healthier food choices quickly, easily and accurately.

The scheme was finally approved by the FSA Board in March 2006. It will be a voluntary system of front of pack food labelling, indicating whether products are high, medium or low in fat, saturated fat, sugar and salt. This will use the format which the research indicated that consumers prefer and can use best, the 'multiple traffic light' format. The numerical criteria for 'high', 'medium' and 'low' colour coding for fat, saturated fats, total sugars and salt, are shown in Appendix 6.

Whilst the FSA was in the process of developing the banding scheme, Tesco – a major retailer in the UK – launched its own scheme, using the multiple traffic light format. However, this was short-lived and Tesco withdrew the scheme, because they said that consumers had difficulty in knowing how to deal with 'amber' lights, and that some products with red lights contained essential nutrients e.g. some dairy products. However, other retailers have developed and are continuing to use colour coded approaches, which reflect the FSA's guidance.

3.2.3 Point of purchase schemes

There are several of these schemes in different European countries, of which the best established is the 'Green Keyhole' scheme in **Sweden**. This has been in use since 1989, and is intended to make it easier for consumers to select low-fat and high-fibre alternatives. Awareness of the symbol appears to be high. In a survey carried out in 1995/96 53% and 76% of the men and women respectively, understood the meaning of the symbol. Intakes of Green Keyhole labelled low-fat foods were significantly higher in men and women with knowledge of the symbol than without. However, in certain sub-groups, particularly the less educated, the message of the symbol appeared to have no association with dietary practices (Larsson *et al.*, 1999).

The Green Keyhole Scheme is a food category specific scheme, which initially focused on fat and fibre in processed foods. It has recently been revised to include more products (including fresh foods), and the nutrients included have been extended to cover sodium and salt (Swedish National Food Administration, 2005). The criteria are very detailed, and can be found in various languages on http://www.slv.se/.

Norway is currently actively engaged in discussions about a signposting scheme for food labels, and two of the major Norwegian retailers have started to use a green colour (similar to the Keyhole scheme) to indicate healthy options (EHN member communication).

Since 2000, in **Finland**, the Finnish Heart Association and Finnish Diabetes Association have jointly administered a POP scheme, which gives a Heart Symbol to qualifying products. Like the Green Keyhole scheme it is food category specific. The key nutrients are fat and sodium, although fibre, sugars and cholesterol are considered for some food groups. The Finnish Heart Association monitors levels of awareness of the symbol. In December 2005, 82 % of the adult population recognised it, and 42 % of respondents said that the symbol has influenced their purchases. The detailed criteria are provided in Appendix 7.

In **Denmark,** the Danish Nutrition Council ran an S-label scheme from 1995 to April 2005, to indicate foods that were relatively low in fat. This scheme is currently part of a government review of labelling. This includes work to develop a front of pack logo to be used on all foods, indicating whether it should be consumed 'most', 'less' or 'least' (Council of the European Union, 2005).

In 1998, the **Netherlands** Heart Foundation explored the potential for a healthy eating logo on foods. The research indicated that such a logo might not communicate what the initiators intended and did not add to the information already on labels, and therefore was not developed further (Werkman, 2000). However, the Netherlands is currently consulting with industry stakeholders to develop a uniform voluntary system for signpost labelling (Council of the European Union, 2005).

Belgium is considering a simplified system based on Reference Intake values. **Ireland** has consulted with stakeholders, and this elicited suggestions for a simplified systems, for example 'star ratings'(Council of the European Union, 2005).

In **Slovenia,** the Slovenian Heart Foundation developed a scheme in 1995, which awards a 'Protects Health' symbol to pre-packaged manufactured foods, which meet specified criteria. The logo and the symbol are shown in Appendix 8. The criteria broadly follow the requirements for nutrient content claims, and there are additional requirements for information to be provided on the label. In 2005 the scheme was extended to catering outlets, and the nutrition criteria for this are also shown in Appendix 8.

Many retailers and manufacturers run schemes that indicate 'healthy choice' or 'healthier' choice, using a range of criteria. Some examples of recent schemes are given in Appendix 3. In 2004, the Consumers Association in the UK carried out some research on these schemes, purchasing a range of products from healthy eating ranges. Their overall conclusion was that it is often not clear what nutrition criteria are being applied, and that there is little consistency between the retailers and manufacturers who use these schemes (Consumers Association, 2004).

3.3 North America

3.3.1 Banding schemes

No banding schemes were identified in North America, in this review. However, both Canada and the USA have carried out research on food labels and consumer needs to inform future development of food labelling. There is some research and current developments, which are relevant to consumer perception and use of nutrition labels in these two countries, and these are described very briefly in the next two paragraphs. In **Canada**, in 2000 during the most recent review of food labelling focus-group testing was carried out with 'intermediaries' i.e. dietitians, public health nurses, diabetes educators, pharmacists, and nutrition educators. They favoured a visual component on food labels to clarify the nutrition label, and were concerned that expressing nutrients as a percentage of Daily Value would be confusing. The approach which was suggested, and which has been taken forward, is to link nutrition

information on labels to the national food guide, which in Canada is a Rainbow (www.hc-sc.gc.ca/).

In the **USA,** the Food and Drugs Administration has adopted a similar approach, and specifically produces web based information linking the nutrition label and the USA Food Guide, the pyramid. This linkage is made through the use of percentage Daily Value on the food label based on an 'average' 2000 calorie diet (http://www.fda.gov/fdac/special/foodlabel/pyramid.html). In April 2005, the FDA issued proposals to improve the appearance and content of the nutrition label. The first change which is being considered is displaying the calorie count more prominently, and the second would require that pre-packaged foods which could be reasonably consumed on one eating occasion, should state the nutrition information of the entire package.

3.3.2 Point of Purchase schemes

Canada's most prominent point of purchase scheme is the Health Check symbol of the Heart and Stroke Foundation (http://www.healthcheck.org/). This uses food category specific nutrient criteria to promote foods that contribute to healthy eating for everyone in the population. The criteria are derived from Health Canada's Nutrient Content Claims, and are shown in Appendix 9.

In the USA there is an extremely lengthy definition of the term 'healthy' or any derivative of the term e.g. 'healthful', 'healthier', 'healthily', and 'healthiness'. This is contained in Federal Regulation 58, 1993, with the most recent amendment being FR 63, 1998. The definition in the USDA's guidance to food labelling, is shown here:

> "A "healthy" food must be low in fat and saturated fat and contain limited amounts of cholesterol and sodium. In addition, if it' s a single-item food, it must provide at least 10 percent (of the Daily Reference Value) of one or more of vitamins A or C, iron, calcium, protein, or fiber. Exempt from this "10-percent" rule are certain raw, canned and frozen fruits and vegetables and certain cereal-grain products. These foods can be labeled "healthy," if they do not contain ingredients that change the nutritional profile, and, in the case of enriched grain products, conform to standards of identity, which call for certain required ingredients. If it's a meal-type product, such as frozen entrees and multi-course frozen dinners, it must provide 10 percent of two or three of these vitamins or minerals or of protein or fiber, in addition to meeting the other criteria. The sodium content cannot exceed 360 mg per serving for individual foods and 480 mg per serving for meal-type products."

This definition is currently under review, and it is proposed that the sodium restriction is relaxed somewhat, and the scope and clarity of the regulation are clarified (http://www.cfsan.fda.gov/. Consultation 29th Sept 2005).

In fact, the definition does not seem to be extensively used in practice. The Food Labelling and Package Survey indicated that just over 3% of foods are labelled as 'healthy' in the USA (Legault *et al.*, 2004).

The only significant point of purchase scheme for healthy foods in the USA is the American Heart Association's Health Check Mark, which uses across the board criteria (details in Appendix 10). This does not appear to include a great many products, and organisations like the Center for Science in the Public Interest (CSPI) would prefer a government backed, and fee-free scheme. In its representations to the FDA in October 2003, CSPI urged that priority should be given to developing a 'Good Food' symbol, so that consumers could easily identify the most healthful foods.

3.4 Australia and New Zealand

3.4.1 Banding schemes

No clear banding schemes were identified in Australasia in this review.
However, a recent scheme which has been developed and is currently being used in Australia is the GI symbol (http://www.gisymbol.com.au). This is a food labelling programme run by Glycemic Index Limited, a non-profit company, whose members are the University of Sydney, Diabetes Australia and the Juvenile Diabetes Research Foundation.
GI is a measure of the rise in blood sugar levels caused by particular foods. When foods are submitted to the scheme, the University of Sydney carries out testing to determine their GI index, which it then ranks as 'low' or 'medium' or 'high'. In addition to having the GI index of foods assessed, foods have to meets the GI Symbol Programme's category specific nutritional criteria that are different for different food types. These are shown in Appendix 11. Thus, this is not a conventional banding scheme, but in terms of consumer perception it does indicate which foods are low or medium or high, using a biological indicator of nutrient content and form (GI).

3.4.2 Point of purchase schemes

The best known point of purchase scheme in Australia and New Zealand is called 'Pick the Tick'. This originated with the Australian Heart Foundation in 1989, followed soon after by the New Zealand Heart Foundation in 1992. In 1996 the two schemes merged to become Australasian.

In order for products to carry the 'Tick' logo, they must meet criteria which have been set for around 60 food categories. However, these are currently being revised, and not publicly available, so details cannot be provided in Appendix 2. As with the Heart Check schemes in North America, a licensing fee is charged to participating companies.

The programme seems to have been very successful in reaching consumers and supporting their ability to make healthy choices. Independent consumer research showed a very high (89%) 'unprompted recognition' of the *Pick the Tick* logo. When shown the logo, awareness rose to 96%. 93% of consumers were in agreement with

the programme concept and 59% of consumers reported buying products with the logo (Gander & Harding, 1999).

One of the expressed aims of the programme is to encourage reformulation of products, and a study was carried out to assess the effect of Pick the Tick on the amount of salt 'not added' to food products (Young & Swinburn, 2002). Changes to sodium level as a result of reformulation were multiplied by the volume of sales and then converted to salt in tonnes to provide a measure of the impact of the programme. In a 1-year period, July 1998 to June 1999, the authors estimated that Pick the Tick influenced food companies to exclude about 33 tonnes of salt through the reformulation and formulation of 23 breads, breakfast cereals and margarine. However, the authors also noted that Pick the Tick is only applied for by a limited number of products, and 'budget' and 'low cost' brands are much less likely to be involved in the scheme.

Appendix 1: Supplement to Report, describing new initiatives relevant to 'front of pack' nutrition schemes, from May to November 2006

Purpose of this Supplement

This short supplement updates the earlier European Heart Network (EHN) commissioned report on 'front of pack' nutrition schemes published in September 2006, with additional relevant work carried out since the original report was drafted.

Format of the Supplement

There have been several developments relevant to simplified front of pack schemes since May 2006. For example, there have been several new industry initiatives and reports. In the UK a new Nutrition Strategy Steering Group has agreed that its first task will be 'to evaluate the impact of 'front of pack' (FoP) signpost labelling schemes on purchasing behaviour and consumer knowledge'.

Four key publications since May 2006 capture many of these new developments. Two of these describe 'front of pack' schemes that are either new, or where details have only recently become publicly available. These will be described briefly.

Two are reviews of relevant work which has been carried out in Europe since the systematic review on consumer understanding of food labelling commissioned by the European Heart Network (Cowburn & Stockley 2003, 2005). These are important publications, which provide up to date information and analyses.

New 'front of pack' schemes

CIAA recommendations

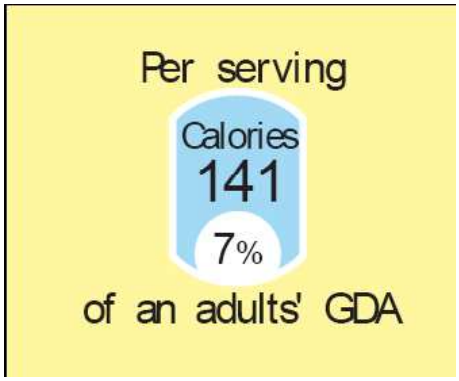
In July 2006 the CIAA (Confederation of the Food and Drink Industries of the EU) announced a common nutrition labelling scheme for use by the food and drink industries across all 25 Member States of the EU.

This has two elements.

Back of pack (BoP)information should include the 'Big 8' nutrients i.e. Energy (Calories), protein, carbohydrate, sugars, fat, saturated fat, fibre and sodium; Nutrition information per serving in addition to the current requirement to provide information per 100g/100ml: and Guideline Daily Amounts (GDAs) for energy fat, saturated fat, sugars and sodium.

On the front of pack labels should show a simple, standard (CIAA agreed – see Figure 2) design which shows the calorie content for a serving of a product and % GDA for Calories. Additional GDAs could be shown using a similar format.

Figure 2:Example of use of CIAA graphic



Although there is no explicit link, these recommendations from CIAA appear to reflect recent consumer research from the European Food Information Council (European Food Information Council 2006). Consumer focus groups were run in Germany, UK, France, and the Netherlands. Participants were asked about 'front of pack' information 'flags' providing information about the energy content of the product. The most popular flags were the simple ones that conveyed the product's energy content per portion or per 100g. References to daily energy needs were also well received, but complicated graphs and percentages were generally disliked.

Unilever Nutrition Enhancement Programme

Unilever has developed a front of pack 'Choices' logo, based on meeting criteria for four nutrients: saturated and trans fats, sodium, and total or added sugars. The criteria are derived from international dietary guidelines, and – unusually for most front of pack schemes – use energy as the basis. One of the reasons that this basis is not commonly used is that it results in inconsistencies for non-energy providing food components. For example, if a product is marginally ineligible for a scheme because it contains too much sodium, this can be manipulated so that it becomes eligible, by slightly increasing its fat content. Unilever has tried to address this by converting sodium recommendations into amounts per 100grams for specific product categories.

The criteria are subject to review and may be different between countries. Up to date information on the criteria, and images of the logo, are available at the Unilever website (http://tinyurl.com/uej2f).

The logo was developed based on literature reviews, and consumer research conducted in eight countries involving over 2,500 participants. The main findings were that a simple logo was effective in stimulating consumers to make healthier choices across a wide range of product categories. A simple logo worked as well, or better than, more complicated systems, as long as consumers trusted the organization responsible for the logo.

Reviews of recent work in Europe

EUFIC review

The European Food Information Council (EUFIC) commissioned a review of research on consumer perception and use of nutrition labelling, carried out in Europe since 2002 (Grunert 2006). A personal copy of this was provided to EHN, and the main points are summarised below, but the final publication is being submitted for publication at the time of writing this Supplement.

The aim of the paper was to review research that has become available after the 2002 deadline used in the earlier EHN review, but to restrict research to that done in the EU 15 countries.

The authors identified 13 peer reviewed papers, and 45 reports of other research or PowerPoint presentations.

In order to analyse these, a theoretical framework was developed, and used to structure the presentation of the results. Some of the main relevant results, together with some observations on these, are shown below:

- Interest: There is widespread consumer interest in nutrition information on food labels. The extent of this varies with demographic group, country and culture, and individual consumer values. Interest is highest the first time products are purchased.

- Proactive searching for information on nutrition labels: There were only two studies which shed light on this. One indicated that there might be more active searching for information in the UK than in France, Germany or the Netherlands. In a French study 22% of consumers reported that they searched actively for information on food labels, whereas 41% said they only read information when it was made available to them.

- Reading labels: Different studies report different levels for this, probably because of varying methodologies. Generally, some groups seem more likely to read labels than others, including women, older people, parents, and first-time purchasers.

- Liking for simplified 'front of pack' nutrition schemes: Overall consumers like this idea. It helps to support decision making when time is limited, and with the interpretation of nutrition concepts. However, people want to understand the basis of schemes, and not to feel coerced.

    - The systems that integrate information, for example simple traffic lights (as opposed to multiple traffic lights) and health logos are less liked. Energy labels, (i.e. of the type it introduced by the CIAA) can raise concerns about a focus on counting calories.

    - Multiple traffic lights and GDA based systems both appear to be liked. Colour coded GDA system are well liked, probably because by

providing numbers this approach gives an impression of transparency and credibility.

- The use of colours is liked, and there are conflicting results on the most liked format.

- Liking for nutrients being expressed per hundred grams or per serving may depend on how the information will be used, for example comparing products or assessing how much nutrient is present in a serving.

- Understanding: Most consumers believe that they understand the most common signposting formats. There are a few studies which report objective tests of understanding, but from those which are described in the review it is clear that the performance of different formats varies with the task which people are asked to undertake. In other words, it is very important to be clear about the key task which a simple 'front of pack' scheme is supposed to help consumers with.

- Use: Many people claim that they use nutrition information on labels, but there are few studies on whether this is really done when people are shopping. It appears that there were only two studies which may be of reasonable quality from the review. The first of these was a Dutch controlled trial assessing exposure to experimental shelf labels indicating fat level, which found no effects. Another study from Waitrose appeared to use a similar methodology to the medium quality protocol analysis study reported in the earlier EHN review. This seems to have yielded some interesting results about preconceptions of healthy foods, and the establishment of brand loyalty.

BEUC Review

The European Consumers' Organisation (BEUC) produced a final report of a discussion group on simplified labelling in July 2006 (BEUC 2006).

This adopted a rather different approach to the more conventional one of reviewing literature. BEUC convened a working group consisting of individuals with an in-depth knowledge and experience of the area, including people associated with consumer and health organisations, national governments and industry.

The group considered current projects in the countries represented on the group, relevant research carried out on different schemes, and available sales data relating to schemes that are already used in the market place. The research was rigorously assessed, with clear quality criteria defined, and evaluative comment provided on each section by members of the group who had not been involved in the work. This review also differed from the EUFIC review in focusing where possible on the actual performance of simplified schemes (including testing whether systems have an effect on consumer choice and behaviour), rather than 'understanding' or perceived performance.

The group then went on to apply the findings in the earlier part of the report by considering a series of 10 questions, which in turn enabled them to come to a majority

agreement on recommendations (Unilever did not subscribe to the recommendations and felt it was too early to focus on one specific model).

The three main types of scheme were classified as:

- health marks, including health ticks and healthy eating logo (this corresponds to the 'point of purchase' category in the EHN review)
- interpretative colour coded schemes (this corresponds to banding schemes in the EHN review)
- schemes which use guideline daily amounts in the presentation of information.

The research which was considered in detail included that from the UK Food Standards Agency and the French evaluation of two schemes which were both mentioned in the earlier EHN report. In addition work carried out by Unilever, Asda, Tesco and Sainsbury was considered. The synthesis and analysis of these pieces of research drew out the following points:

- All relevant research showed support among consumers for a front of pack simplified labelling system.

- The only research which went beyond assessing perceived performance or understanding was undertaken by the UK Food Standards Agency. More actual performance testing is needed.

- Any scheme needs to be endorsed by a credible body.

- Colour coding has a positive effect (apart from the Tesco research which found confusion about the relative meaning of amber and red traffic lights, but this is not supported in other research).

- Simple traffic light (i.e. where information about several nutrients is integrated, compared with multiple traffic lights which provide separate assessments for each nutrient) do not seem particularly popular or to perform well.

- Several research studies highlighted some confusion over the use of guideline daily amounts, and this needs further investigation.

The synthesis and analysis of the section of the report concerning sales data concluded that although it is encouraging the sales data shows that introducing new simplified labelling schemes can have an effect, there are difficulties in interpreting this because of the lack of detail about methodology and potentially different approaches to data collection. If sales data is going to be useful, it needs to be collected and analysed in the same way across different schemes and outlets.

A summary of the main general points finally agreed by the group is given below:

- an EU-wide simplified labelling scheme would help consumers from all backgrounds (BEUC specifically considered the needs of consumers with low numeracy skills in its deliberations) choose a healthier diet

- such a scheme should also encourage producers to reformulate products

- simplified labelling should be on the front of the pack and in addition to nutrition information provided on the back of pack

- any scheme would need to be endorsed by a credible independent body

- agreement would be needed on both a clear format and a set of underpinning nutritional criteria. The EFSA might have an important role in the development of the criteria in consultation with stakeholders. The format of such a scheme should be based on robust consumer research. DG SANCO in conjunction with stakeholders, should take work forward on how effective such a scheme would be

- any scheme should not require intensive education but should be supported by simple and consistent information from stakeholders and others. It should be part of a broader EU strategy to tackle obesity and diet-related disease

- performance and effectiveness evaluation would be necessary.

In addition the group made some specific recommendations for the development of a scheme:

- colour coding of levels of nutrients seems to help make sense of numerical information

- having too many nutrients can be confusing, and so should be limited. The nutrients to be taken into account should reflect public health priorities and consumer research and include total fat, saturated fat, sugars and salt

- a simple system merely providing information about the energy content of the food is too limited

- a combination of the information per 100g and per serving would allow consumers to make a quick assessment of the nutrition content of the food and compare different products;

- it is possible that healthy eating logos or symbols could co-exist with other forms of simplified front of pack labelling

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Appendix 2: Details of Banding and Point Of Purchase schemes

Alphabetical order by country

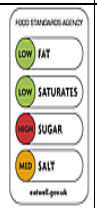
Name of Scheme	Date	Organ isation	Banding/ POP	Format	Country	Category specific or across-the-board	Base	Type of model	Basis of numbers	Nutrients and foods included	Numerical criteria
Pick the Tick	1989-now	Heart Foundations of Australia and New Zealand	POP		Australasis	60 categories	Previous criteria used per 100g	Threshold	Not transparent	.Nutrients include total fat, saturated fat, salt, energy and fibre, trans fats (for margarines), added sugar.	Criteria currently being revised, and not publicly available All fresh fruit and vegetables and fresh foods like fresh meat and chicken, unprocessed grains, legumes, nuts and seeds, automatically qualify
GI symbol	from about 2003	Glycemic Index Limited, a non-profit company, whose members are the University of Sydney, Diabetes Australia and the Juvenile Diabetes Research Foundation	Banding		Australia	Category specific	100g with some per serving values	Threshold	Not transparent	carbohydrate fat, saturated fat, sodium fibre	See Appendix 11

Name of Scheme	Date	Organ isation	Banding/ POP	Format	Country	Category specific or across-the-board	Base	Type of model	Basis of numbers	Nutrients and foods included	Numerical criteria
Health Check	?2000-now	Heart and Stroke Foundation	POP		Canada	Category Sepcific	Per reference amount and per serving of stated size	Threshold	Nutrient contents claims definitions	Fat Saturated fat Fibre Starch(sometimes) Selected vitamins and minerals	See Appendix 9
S-label	1995-April 2005	Danish Nutrition Council	POP	'S'	Denmark	?	?	?	?	Fat	?
Heart Symbol	2000 – now	Finnish Heart Association + Finnish Diabetes Association	POP	Heart Symbol 	Finland	Category Specific	100g	Threshold	Not transparent	Fat (and proportion of hard fat) Sodium and sometimes: Sugars Cholesterol Fibre	See Appendix 7
Tripartite classification model	2005	Netherlands Nutrition Council	Banding	Flexible	Netherlands	Category specific	100g	Threshold	Desired change in dietary intake e.g if intake is 25% less than recommendation, the level of that nutrient in foods	Energy, sat fat, sugars, fibre, vitamin C, folate, n 3 fats	See Appendix 4

Name of Scheme	Date	Organ isation	Banding/ POP	Format	Country	Category specific or across-the-board	Base	Type of model	Basis of numbers	Nutrients and foods included	Numerical criteria
									should be increased by 25% (calculated by food category).		
Protect Health	1995 – now	Slovenian Heart Foundation	POP		Slovenia	Across the Board	100g	Threshold	Nutrient claims	Fat, saturated fat, cholesterol, sugars, sodium , fibre, energy	See Appendix 8
Green Keyhole	1989-present	National Food Administration	POP	Logo Green Keyhole 	Sweden	Category specific	mixed 100g and kJ	Threshold	Not transparent	Fat, sugars, sodium and fibre.	Varies with food category. See http://www.slv.se/ for details.
Coronary Prevention Group Banding Scheme	1986 – now	Coronary Prevention Group	Banding	Verbal High/ medium/ low	UK	Across the board	kJ	Threshold	Dietary recommend actions	Originally fat, saturated fat, total sugars, sodium.	**Original scheme based on WHO recommendations (see Appendix 5 for revised scheme for use in UK).** **Fat**: Low <15% energy Medium-Low 15.0-29.9% energy Medium- High 30-45% energy High>45%energy **Sat fat:** Low <5% energy Medium-Low 5.0-9.9% energy Medium- High 10-15% energy High >15% energy **Sodium**:

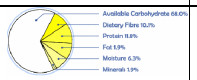
Name of Scheme	Date	Organ isation	Banding/ POP	Format	Country	Category specific or across-the-board	Base	Type of model	Basis of numbers	Nutrients and foods included	Numerical criteria
											Low <1g/10MJ Medium –Low 1.0-1.9g/10MJ Medium- High 2.0-3.0g/10MJ High >3.0/10MJ **Total sugars:** Low <6% energy Medium-Low 6.0-11.9% energy Medium- High 12-18% energy High >18% energy
'A lot' and 'A little'	1996 – now	Food Standards Agency	Banding	Verbal 'A lot' 'A little'	UK	Across the board	100g	Threshold	Dietary recommendations	Sugars, fat, saturated fat, fibre	**A LOT**: =< 10g of sugars 20 g sugar[5] 20g of fat 5g of saturates 3g of fibre 0.5g of sodium **A LITTLE** => 2g of sugars 3g sugars[5] 3g of fat 1g of saturates 0.5g of fibre
FSA signposting scheme	2006	Food Standards Agency	Banding	Multiple traffic light e.g.	UK	Across the Board	100g	Threshold	Low band based on nutrient content claims High band derived from dietary	Fat Saturated fat Sugar (total) Salt	See Appendix 6

[5] Proposed new levels based on population dietary goals for total sugars in Rayner M., Scarborough P. & Williams C. (2004b): The origin of Guideline Daily Amounts and the Food Standard Agency's guidance on what counts as 'a lot' and what counts as 'a little'. *Public Health Nutr* **7**, 549-556

Name of Scheme	Date	Organ isation	Banding/ POP	Format	Country	Category specific or across-the-board	Base	Type of model	Basis of numbers	Nutrients and foods included	Numerical criteria
									recommend ations		
Heart Check mark	curren t	American Heart Association	POP		USA	Across the Board	Per Servi ng	Threshol d	Original criteria for the Program based on the 1993 Federal "Dietary Saturated Fat and Cholesterol and Coronary Heart Disease" health claim	Fat Saturated Fat Cholesterol Sodium Vitamins A, C Iron, Calcium Protein, Fibre Wholegrain	See Appendix 10

Appendix 3: Examples of commercial schemes

Alphabetical order by company

Name of Scheme	Company	Sector	Banding / POP	Format	Category specific or across-the-board	Base	Type of model	Nutrients and foods included
Balanced Choices	Compass (Selecta)	Caterer	POP		Across the board	?Serving	Threshold	<200kcal <6g fat <250mg sodium < 5 g added sugars (for cold drinks)
Sensible Solution	Kraft, 2005	Manufacturer	POP		Categories	Serving	Threshold	Category specific see:- www.kraftfoods.com
Smart Spot	Pepsi Co USA	Manufacturer	POP		Categories	Serving	Threshold	Fat SFA TFA Na Added sugars Nutritional Density (either Vitamin C, or vitamin A, protein, fiber, Ca, Fe)
Be good to yourself	Sainsbury UK	Retailer	Banding		Across the board	100g	Threshold	Reflects FSA UK guidance
	Weetabix	Manufacturer	N/A		N/A	100g	N/A	Carbohydrate, fibre, protein, fat, moisture, minerals.

Appendix 4: Netherlands Tripartite classification

Criteria for tripartite classification model for foods (per 100g)

1: Basic food groups

Product group	A: 'preferable'	B: 'middle course'	C: 'exceptional'
Potatoes, rice, pasta, pulses	Fibre: min 3 g/100g Saturated fat: max 1 g/100g	Fibre: 2-3 g/100g Saturated fat: max 1 g/100g	Fibre: less than 2g/100g
Bread, bread substitutes, breakfast cereals	Fibre: min 6 g/100g Saturated fat: max 1 g/100g	Fibre: 5-6 g/100g or Fibre: min 6 g/100g Saturated fat: min 1 g/100g	Fibre: less than 5 g/100g
Vegetables, fruit and fruit juices	Vitamin C: min 1 mg/100g Folate: min 1 mg/100g Fibre: min 1 g/100g Saturated fat: max 1 g/100g Sugars: not added	Vitamine C: min 1 mg/100g Folate: min 1 mg/100g	Vitamin C: not present
Milk and milk products	Saturated fat: max 0,5 g/100g Sugars: max 6 g/100g	Saturated fat: 0,6-1 g/100g or Saturated fat: max 0,5 g/100g Sugars: more than 6 g/100g	Saturated fat: more than 1 g/100g or Saturated fat: 0,6-1 g/100g Sugars: more than 6 g/100g
Cheese	Saturated fat: max 12 g/100g Energy: max 300 kcal/100g	Saturated fat: 13-18 g/100g or Saturated fat: max 12 g/100g Energy: more than 300 kcal/100g	Saturated fat: more than 18 g/100g
Meat, prepared meat products, chicken, eggs	Saturated fat: max 4g/100g Energy: max 200 kcal/100g	Saturated fat: 4-5 g/100g or Saturated fat: max 4 g/100g Energy: more than 200 kcal/100g	Saturated fat: more than 5g/100g
Fish	Saturated fat: max 4 g/100g n-3 fatty acids: max 2 portions for recommendation energy: max 200 kcal	Saturated fat: 4-5 g/100g n-3 fatty acids: 2-4 portions for recommendation	Saturated fat: more than 5 g/100g n-3 fatty acids: more than 4 portions for recommendation
Spread and cooking fats	Saturated fat: max 16 g/100g	Saturated fat: 17-24 g/100g	Saturated fat: more than 24 g/100g

2.:Other food groups

Product groups	'low' in SFA	'high' in SFA	'high' in fibre
Snacks, spicy filling	max 4 g/100g	> 5 g/100g	n.a.
Sauces	Max 2 g/100g	>4 g/100g	n.a.
Cake, pastry, nuts, savoury snacks	Max 6 g/100g	> 6 g/100g	≥ 2 g/100g
Sweets, sweet filling	Max 3 g/100g	> 4 g/100g	≥ 1 g/100g
Cream	Max 12 g/100g	> 18 g/100g	n.a.
Evaporated milk	Max 1 g/100g	> 3 g/100 g	n.a.

Appendix 5: Coronary Prevention Group Nutrition Banding Scheme.

Revised version of 12.2.92 (reproduced from (Rayner *et al.*, 2004a))

Nutrient	Population dietary goal	Low	Medium Low	Medium High	High
	% energy (kJ/100kJ)				
Protein	15 (2)	<7.5	7.5-15	15-22.5	>22.5
Carbohydrate	44 (1)	<23.5	23.5-47	47-70.5	>70.5
Total sugar	17 (3)	<8.5	8.5-17	17-25.5	>25.5
Non-milk extrinsic sugar	10 (1)	<5	5-10	10-15	>15
Total fat	33 (1)	<16.5	16.5-33	33-49.5	>49.5
Saturated fat	10 (1)	<5	5-10	10-15	>15
Polyunsaturated fat	6 (1)	<3	3-6	6-9	>9
Monounsaturated fat	12 (1)	<6	6-12	12-18	>18
	g/10MJ (4)				
Cholesterol	0.3 (1)	<0.15	0.15-0.3	0.3-0.45	>0.45
Total salt	6 (2)	<3	3-6	6-9	>9
Total sodium	2.4 (2)	<1.2	1.2-2.4	2.4-3.5	>3.5
Total fibre	30 (3)	<15	15-30	30-45	>45
Non-starch polysaccharide	18 (1)	<9	9-18	18-27	>27

Notes on the basis to this model:
(1) Goals from the COMA report on dietary reference values (Department of Health, 1991).
(2) Goals from the World Health Organisation's report on diet, nutrition and the prevention of chronic disease (WHO, 1990).
(3) The population dietary goal was derived as described as suggested could be done in a previous paper ((Rayner et al., 2004b)
(4) Note that even where nutrients have little or no energy content: i.e. cholesterol, fibre and sodium, the nutrient content levels are set on a per energy basis. The bandings for these nutrients are given per 10 MJ – being an estimate of average daily dietary energy intake. They could of course be given in g/100kJ by dividing by 100.

Appendix 6: UK Food Standard Agency's criteria for colour coded high, medium and low bands for use in a voluntary signposting scheme

Criteria per 100g

	Low (green)	Medium (amber)	High (red)
Fat	≤ 3 g/100g ≤ 1.5 g/100 ml	> 3 - <20 g/100g > 1.5 - <10 g/100ml	≥ 20 g/100g ≥ 10g/100ml
Saturates	≤ 1.5 g/100g ≤ 0.75 g/100 ml	> 1.5 - <5 g/100g > 0.75 - <2.5 g/100ml	≥ 5 g/100g ≥ 2.5g/100ml
Total Sugars	≤ 5 g/100g ≤ 2.5 g/100 ml	> 5 - <15 g/100g > 2.5 - <7.5 g/100ml	≥ 15 g/100g ≥ 7.5g/100ml
Salt	≤ 0.3 g/100g ≤ 0.3 g/100ml	> 0.3 - <1.5g/100g > 0.3 - <1.5g/100ml	≥ 1.5 g/100g ≥ 1.5 g/100ml

Criteria per portion stated on pack – only applies to foods sold in portions greater than 250g

	High (red)
Fat	≥ 21g / portion
Saturates	≥ 6g / portion
Total Sugars	≥ 18 g / portion
Salt	≥ 2.4g/portion

Note: These criteria apply, where appropriate, in addition to the criteria in the per 100g table above.

Appendix 7: The Heart Symbol of the Finnish Heart Association and the Finnish Diabetic Association

Nutrient criteria for granting the Heart Symbol, by food category

Milk. milk products and other similar products	
Milk, sour milk and other similar products	Fat ≤ 0,5 g/100 g, or if fat content 0,51 – 1,0 g/100 g hard fat ≤ 33 % of the total fat No added sugars
Yoghurt and quark and other similar products (non-drinkable products)	Fat ≤ 0,5 g/100 g, or if fat content 0,51 – 2,0 g/100 g hard fat ≤ 0,4 g/100 g Sugars ≤ 12 g/100 g
Cultured milk	Fat ≤ 1,0 g/100 g Sugars ≤ 12 g/100 g
Cream, crèmes and other similar products used in cooking	Fat ≤ 10 g/100 g, or if fat content 10,1 – 15 g/100 g, hard fat ≤ 33 %of the total fat Sodium ≤ 300 mg/100 g
Non-ripened cheese and similar products	Fat ≤ 15 g/100 g, or if fat content 15,1 – 30 g/100 g, hard fat ≤ 33 % of the total fat Sodium ≤ 480 mg/100 g
Cheese spreads and similar products	Fat ≤ 10 g/100 g, or if fat content 10,1 - 15 g/100 g, hard fat ≤ 33 % of the total fat Sodium ≤ 700 mg/100 g
Cottage cheese	Fat ≤ 2,0 g/100 g Sodium ≤ 300 mg/100 g
Ripened cheese and similar products	Fat ≤ 17 g/100 g, or if fat content 17,1 – 30 g/100 g, hard fat ≤ 33 %of the total fat Sodium ≤ 480 mg/100 g
Ice creams, sherbets	Hard fat ≤ 4 g/100 g
Edible fats	
Fat spreads	Hard fat ≤ 33 % of the total fat Sodium ≤ 400 mg/100 g
Vegetable oils	Hard fat ≤ 20 % of the total fat
Liquid oils	Hard fat ≤ 20 % of the total fat Sodium ≤ 400 mg/100 g
Salad dressings	Hard fat ≤ 20 % of the total fat Sodium ≤ 400 mg/100 g
Mayonnaise, hamburger and sandwich dressings	Fat ≤ 40 g/100 g Hard fat ≤ 20 % of the total fat Sodium≤ 400 mg/100 g Cholesterol ≤ 20 mg/100 g
Processed meat	
Whole meat products	Fat ≤ 4 g/100 g Sodium ≤ 800 mg/100 g
Cold cut sausages and sausages to be cooked	Fat ≤ 12 g/100 g Hard fat≤ 40 % of the total fat Sodium ≤ 600 mg/100 g Cholesterol ≤ 100 mg/100 g
Spices and seasoning sauces	
Mustards and ketchups	Sodium ≤ 400 mg/100 g
Spices and seasonings	No sodium added
Seasoning and barbecue sauces and marinades	Sodium ≤ 300 mg/100 g
Bouillon in cubes and powdered and concentrated broth	Sodium ≤ 200 mg/100 g when stock is prepared according to instructions

Bread and cereals	
Bread	Fat≤ 5 g/100 g Sodium ≤ 280 mg/100g
Crisp bread, Finn crisp	Fat ≤ 5 g/100 g Sodium ≤ 480 mg/100 g
Pastry (sweet and salty), biscuits, rusks	Fat ≤ 25 % of the energy Hard fat ≤ 33 % of the total fat Sodium ≤ 280 mg/100 g Sugars ≤ 20 g/100 g
Breakfast cereals (cereals, muesli and alike) , hot cereals, flakes and meal (porridge)	Fat ≤ 5 g/100 g, or if fat content 5,1 – 10 g/100 g, hard fat ≤ 33 % of the total fat Sodium ≤ 400 mg/100 g Sugars ≤ 16 g/100 g g
Pasta, rice and similar products	Fibre ≥ 6 g/100 g (dry weight)

In the "Bread and cereals" group the amount of fibre is taken into account as a completing factor:

- Bread
- Crisp bread and Finn crisp
- Pastry, biscuits and rusks
- Breakfast cereals and comparable hot cereals
  flakes and meal (porridge)

In products rich in fibre, i.e. fibre ≥ 6 g/100 g, a symbol
Heart Symbol + Fibre can be used.

In the group "Pasta, rice etc" group, the content of fibre is an obligatory criteria for granting the symbol. In these products only Heart Symbol + Fibre -symbol can be used.

The limit for sugars includes all mono-and disaccharides in the product

Convenience food, semi-processed food, meal components	
Ready-to-eat food (including meat/fish/ vegetables +potato/pasta/ rice etc.), meal salads and semi-processed foods prepared according to instructions	Fat ≤ 25 % of total energy or if fat content 25,1 - 35 % hard fat ≤ 33 % of the total fat Sodium ≤ 300 mg/100 g Cholesterol ≤ 60 mg/100 g
Meat, fish and vegetable sauces and semi-processed foods prepared according to instructions	Fat ≤ 4 g/100 g, or if fat content 4,1 – 8,0/100 g, hard fat≤ 33 %of the total fat Sodium ≤ 300 mg/100 g Cholesterol ≤ 60 mg/100 g
Sauces (meal and food sauces) and semi-processed food prepared according to instructions	Fat ≤ 4 g/100 g, or if fat content 4,1 – 8 g/100 g, hard fat ≤ 33 % of the total fat Sodium ≤ 300 mg/100 g Cholesterol ≤ 40 mg/100 g
Processed foods of fish, meat and vegetables (e.g. meat balls and vegetable patties)	Fat≤ 10 g/100 g, or if fat content 10,1 – 15 g/100 g, hard fat ≤ 33 %of the total fat Sodium ≤ 400 mg/100 g Cholesterol ≤ 100 mg/100 g
Side salads (mayonnaise and fresh)	Fat ≤ 6 g/100 g Hard fat ≤ 20 %of total fat Natriumi ≤ 300 mg/100 g Cholesterol ≤ 40 mg/100 g

Supplementary points on criteria for granting the Heart Symbol

To get the Heart Symbol the product must meet all the criteria applying to the product group. The criteria apply to food sold on the retail market to consumers. Only ready packed foods are included in the system.

Appendix 8: Slovenian Heart Foundation's 'Protects Health' scheme

Nutritional criteria

COMPONENT	CLAIM	CONDITIONS
Fat	Low Free	< 3 g / 100 g < 1,5 g / 100 g < 0,5 g / 100 g / ml
Saturated fat	Low Free	< 1,5 g / 100 g < 0,75 g / 100 ml < 0,1 g / 100 g /ml
Cholesterol	Low Free	< 20 mg / 100 g < 10 mg / 100 ml < 0,005 g / 100 g / ml
Sugars	Free	< 0,5 g / 100 g / 100 ml
Sodium	Low Free	< 120 mg / 100 g < 40 mg / 100 g < 5 mg / 100 g
Dietary fibre	High	> 4 g / 1 MJ
Energy	Low Free	< 40 kcal (170 kJ) / 100 g < 20 kcal (80 kJ) / 100 ml < 4 kcal (17 kJ) / 100 ml

Additional criteria

All information on the packaging of a food product has to be written in the Slovenian language. The price should always be visible on the food product itself or somewhere near the product.

The following information should be printed on any packaging of a food product:

- name of the product and its brand name, if relevant),
- expiry date,
- net quantity (all in the same visual field),
- list of ingredients, quantity of ingredients,
- alcohol (if the level exceeds 1.2%),
- food additives marked with letter E and a number – which means the use of this additive is permitted (preservatives, solidifying agents, condensing agents, etc),
- name and address of the manufacturer (for imported food products also name and address of the importer),
- the place of origin of the food product.

If a food product is labelled with information on its special property - like with the symbol PROTECTS HEALTH, the declaration has to contain the food's nutritional value. Below the symbol PROTECTS HEALTH the properties should be enumerated on the basis of which the food product has acquired this symbol (e.g. due to its low fat content). This symbol is granted by the Slovenian Heart Foundation according to strict standards implemented by the World Health Organisation.

Nutritional criteria for use of symbol in catering outlets

Menus must have a low fat content (less than 30% according energy value), low content of saturated fatty acids (less than 10% according energy value), low content of cholesterol (less then 100 mg per 1000 kilokalories) and sodium (less than 800 mg per 1000 kilokalories).

Appendix 9: Canada's Heart and Stroke Foundation Health Check Nutrition Criteria

* **Sodium Values are evaluated for all categories**. The criteria used for evaluation is based on the values from the Heart Health Claim (480 mg for single foods and 960 mg for entrees). Low Fat claims are evaluated on 50g for any serving that has a reference amount of 30g or less.

Grain Products

Food Category	Serving Size	Entry-Level Nutrient Criteria*
Bread	50 g	- Low fat or Low saturated fat AND - source of fibre
Bread Products (e.g. bagels, pitas, english muffins	55 g	- Low fat or Low saturated fat AND - source of fibre
Breakfast Cereals (20g to 42g per 250mL)	30 g	- Low fat AND/OR no added fat AND - source of fibre
Breakfast Cereals (43g or more per 250mL)	55 g	- Low fat AND/OR no added fat AND - High source of fibre
Very High Fibre Breakfast Cereals (28g or more per 100g)	30 g	- Low fat AND/OR no added fat AND - Very high source of fibre
Flour	30 g	- Source of Fibre
Rusks	30 g	- Low saturated fat - 3g or less total fat per 30g
Crackers	20 g	- Low saturated fat - 3g or less total fat per 20g
Croutons	20 g	- Low fat - Source of fibre or vitamin A or Vitamin C or calcium or iron

Rice Cakes	15 g	- Low fat
Waffles / Pancakes	75 g prepared	- Low fat
Grain - based Bars	30 g or 40 g (if filled or coated)	- Low fat AND - Starch value is evaluated - OR Low saturated fat AND - Source of fibre
Muffins / Snack Breads	55 g	- Low fat - starch value is evaluated OR - Low saturated fat - Source of fibre
Rice (except Instant Rice) / Grains (plain)	45 g	- All fit
Instant Rice (plain)	45 g	- Enriched
Pasta	85 g	- Enriched OR High source of fibre
Side Dishes - Rice, grains or potatoes (seasoned, sauced)	140 g (prepared)	- Low fat
Side Dishes - Pasta or noodles (seasoned, sauced)	125 g (prepared)	- Low fat (for 250ml on an 'as sold' basis) - Enriched OR High source of fibre

Vegetables & Fruit

Food Category	Serving Size	Entry-Level Nutrient Criteria*
Fruit Juices	250 ml	- All REAL juices fit
Fresh Fruit	140 g	- All fit
Frozen Fruit	140 g	- 100% fruit
Canned Fruit	150 g	- In light syrup or fruit juice
Apple and other fruit sauces	140 g	- 100% fruit
Dried Fruit and Dried Fruit Snacks	40 g	- Fruit as first ingredient - fat free
Fresh and Frozen Vegetables (plain)	100 g (65 g - lettuces)	- All fit
Canned Vegetables (plain)	100 g	- Sodium value is evaluated

Frozen and Canned Vegetables (seasoned, sauced, fried)	100 g	- Low fat
Tomato and Vegetables Juices and Blends	250 ml	- Good source of vitamin A AND/OR Good source of folacin - Sodium value is evaluated

Milk Products

Food Category	Serving Size	Entry-Level Nutrient Criteria*
Milk/Milk Based Drinks	250 ml	- Lower fat (2% M.F. or less) AND - Excellent source of calcium
Yogurts	175 g	- Lower fat (2% M.F. or less) AND - Good source of calcium
Yogurt Based Drinks	250 ml	- Lower fat (2% M.F. or less) AND - Good source of calcium
Flavoured Fresh Cheese	100 g	- Lower fat (2% M.F. or less) AND - Good source of calcium
Puddings / Flans / Frozen Dairy Deserts	125 ml	- Low fat AND - Source of calcium
Cheese	30 g	- Lower fat (20% M.F. or less) AND - Good source of calcium
Simili Cheese	30 g	- Lower fat (20% M.F. or less) AND - Good source of calcium - 5g or more protein
Fresh Cheese (plain) - ricotta - quark - cottage	 55 g 100 g 125 g	- Low fat OR - Reduced fat AND - Good source of calcium
Plant-based Beverages (e.g. soy beverages)	250 g	- Fortified / Enriched AND - Low fat OR Low saturated fats

Meat & Alternatives

Food Category	Serving Size	Entry-Level Nutrient Criteria*
Meats / Poultry (plain, seasoned, coated)	125 g (raw) 100 g (cooked)	- Lean (10% or less fat)
Meats / Poultry (with sauce)	140 g	- Lean (10% or less fat)
Ground Meats	100 g (raw)	- Lean (17% or less fat)
Burgers and Meatballs	100 g (raw) or 60 g (cooked)	- Lean (17% or less fat)
Sausages	75 g	- Lean (10% or less fat)
Deli Meats / Ham	55 g	- Lean (10% or less fat)
Fish and Seafood (plain)	125 g (raw) 100 g (cooked)	- Sodium value is evaluated
Fish and Seafood (seasoned, coated, sauced)	125 g (raw) 100 g (cooked)	- Extra lean (7.5 % or less fat)
Canned Fish and Seafood (packed in broth or water)	55 g	- Sodium value is evaluated
Canned Fish and Seafood (seasoned, sauced)	55 g	- Lean (10% or less fat) OR - No added fat
Processed Fish (e.g. crab imitation)	55 g	- Low fat
Dried Legumes	100 g	- All fit
Frozen and Canned Legumes	200 g	- Sodium value is evaluated
Canned Legumes (prepared)	125 g	- 3g or less total fat per 125g
Tofu	85 g	- Low saturated fat - 10g or less total fat
Vegetarian Burgers and Meatballs	60 g	- Lean (10% or less fat) - protein value is evaluated
Vegetarian Meat Alternatives (seitan, Veggie Ground Meat, So soya, simulated cutlet, simulated meat strips, etc.)	100 g	- Lean (10% or less fat) - 10g or more protein

Vegetarian Deli Meats (sausages, simulated ham, pepperoni, etc)	55 g	- Lean (10% or less fat) - 5g or more protein
Eggs	1 egg	- All fit
Egg Substitute	50 g	- Low fat
Nuts, Seeds or Ready to Eat Dried Legumes(e.g. soybeans) *plain, uncoated / /coconut not eligible	50 g (30 g shelled if not use as snacks)	- No added salt
Nuts and Seeds Butters	15 ml (peanut butter) 30 mL (others)	- Nuts or seeds as the 1st ingredient - Sodium value is evaluated

Other Foods

Food Category	Serving Size	Entry-Level Nutrient Criteria*
Cookies	30 g	- Low fat AND - Starch value is evaluated
Snack Foods (e.g. popcorn, pretzels, chips)	50 g	- Low fat
Sherberts	125 g	- Low fat AND - Source of vitamin C AND/OR - Source of vitamin A AND/OR - Source of folacin - Source of fibre
Oils	10 ml	- Low saturated fat
Margarines	10 g	- Low saturated fat and non hydrogenated
Light Margarines	10 g	- Reduced fat (50% less fat than regular margarine)
Dips, Spreads, Salsa, Pesto & Salad Dressings	15 mL (mayonnaise) 55 g (spreads) 60 mL (pesto) 30 mL (others)	- Low saturated fat
Olives	15 g	- Low saturated fat

Combination Foods

Food Category	Serving Size	Entry-Level Nutrient Criteria*
Soups	250 ml	- Low fat AND - Reduced Sodium (maximum 650mg) AND - Source of vitamin A or C or iron or calcium or fibre
Dinners & Entrees / Mixed Dishes	250 g	OPTION #1 Per 250 g and per serving declared on the label: Total fat: 10 g or less Protein: 10 g or more Sodium: 960 mg or less OPTION #2 - Low in saturated fat (per 100g) AND Per 250 g and per serving declared on the label : Total fat: 15 g or less Protein: 10 g or more Sodium: 960 mg or less
Pasta Sauce (with or without meat)*	125 ml	- Lower fat OR - Low saturated fat
Pizza	250 ml	Per 250 g and per serving declared on the label: - Total fat: 17 g or less (33% less fat than regular pizza) - Protein: 10 g or more - Sodium: 960 mg or less
Potato and Pasta Salads	140 g	- Low saturated fat - 7.5 g or less total fat
Other Salads	100 g	- Low saturated fat 7.5 g or less total fat
Dried Fruit and Nut Mixture	50 g	- No added salt
Nut and/or Seed Bars (with or without dried fruit)	35 g	- No added salt

Appendix 10: American Heart Association's Health Check Mark – nutrition criteria

To be certified, a product must meet all of the following nutritional levels. These levels are based on a single serving size as specified by the FDA for an individual food.

	American Heart Association Products displaying the heart-check mark meet American Heart Association food criteria for saturated fat and cholesterol for healthy people over age 2. heartcheckmark.org	American Heart Association Products displaying the heart-check mark meet American Heart Association food criteria for saturated fat, cholesterol and whole grains for healthy people over age 2. heartcheckmark.org
Total Fat	3gms or less	Less than 6.5 gms
Saturated Fat	1 gm or less	1gm or less
Cholesterol	20 mg or less	20 mg or less
Sodium	480 mg or less	480 mg or less
Contain 10% or more of the daily value of 1 of 6 nutrients; vitamin A, vitamin C, iron, calcium, protein or dietary fiber	Yes	Yes
Trans fat*		.5 gm or less
Whole grain		51% by weight/Reference Amount Customarily Consumed (RACC)
Minimum Dietary Fiber		1.7 g/RACC of 30 gms 2.5 g/RACC of 45 gms 2.8 g/RACC of 50 gms 3.0 g/RACC of 55 gms

Seafood, game meat, meat and poultry must meet the standards for "extra lean".

Appendix 11: Australia. The GI symbol

http://www.gisymbol.com.au/pages/index.asp

Product Eligibility and Nutrient Criteria
The nutrient criteria aim to include foods which:
contain carbohydrate
are not high sources of fat, particularly saturated fat,
are moderate in sodium content and
are a source of fibre (where appropriate).

It is important that the GI value is not regarded as the sole determinant of food choice – just as kilojoule value or fat content should not be - but only one factor.

- The GI symbol program criteria do not include criteria related to sugar content as the GI is a more important indicator of how foods affect blood glucose levels. In addition, there are calcium content criteria for some dairy products and some energy density criteria.
- Provided the GI values have been derived using the approved methodology, the actual GI value does not affect eligibility for the program. High GI foods play an important role in some sports and diabetes-related situations and provide dietary variety.
- Nutritional information (eg nutrition information panel data) and GI testing data need to be provided to Glycemic Index Limited to assess eligibility against the criteria.

Guidelines for Product Acceptability

To be eligible, foods must:

- Contain at least 10g carbohydrate per serve.
- Have had their GI determined by SUGiRS (Sydney University Glycemic Index Research Service) or by another approved laboratory using the approved in vivo methodology.
- Have a nutritional composition that meets the required nutrient criteria for the appropriate food category (see below).

Notes:
1. 'per serve' in this document refers to the manufacturer's stated serving size on product label, or for unpackaged products, to generally accepted serving sizes.
2. Allowance will be made for normal biological variations.

General Exclusion
High and intermediate GI soft drinks, cordials, confectionery, sugars and syrups (other than jam, honey and other carbohydrate containing spreads which are eligible if they meet the guidelines above).

1. CEREAL GRAINS AND PRODUCTS

Breads and Crispbreads

Fat	5 g/100 g or less, or 5 – 10 g/100g, provided that saturated fat is ≤ 20% of the total fat content
Sodium	450 mg/100 g or less
Dietary fibre	3 g/100 g or more

Breakfast Cereals

Fat	5 g /100 g or less, or 5 – 10 g/100g, provided that saturated fat is ≤ 20% of the total fat content (or up to 15g/100g if the source of saturated fat is grains, seeds or nuts but not coconut).
Sodium	400 mg/100 g or less
Dietary fibre	3 g/100g or more

Bran

Fat	5 g /100 g or less, or 5 – 10 g/100g, provided that saturated fat is ≤ 20% of the total fat content
Sodium	400 mg/100 g or less
Dietary fibre	3 g/100g or more

Bakery Products

Includes cakes, muffins, slices, fruit pies, pikelets, pancakes, crumpets, waffles, hotcakes, breakfast cereal bars and fruit-filled bars, muesli bars, and sweet biscuits (fresh, frozen or made from packet mix).

Fat	5 g/100 g or less, or 5 – 10 g/100g, provided that saturated fat is ≤ 20% of the total fat content
Sodium	400 mg/100 g or less
Dietary fibre	3 g/100 g or more
Carbohydrate	35 g per serve (2 exchanges) or less
Energy	≤ 1500 kJ per 100 g or ≤ 500 kJ per serve.

Plain Grains, Flours and Pasta

All acceptable (eg. oats, pasta, noodles, rice, couscous, polenta, wheat, barley, burghul, tapioca, sago).

Filled Pasta, Instant/Savoury Noodles, Combined Pasta and Sauce Mixes

These nutrient limits apply to the cooked products, ready for consumption.

Fat	5 g/100 g or less, or 5 – 10 g/100g, provided that saturated fat is ≤ 20% of the total fat content
Sodium	350 mg/100 g or less

2. LEGUMES AND PRODUCTS

Dried

All acceptable.

Canned, Vacuum-packed

Fat	5 g/100 g or less, or 5 – 10 g/100g, provided that saturated fat is ≤ 20% of the total fat content
Sodium	300 mg/100 g or less

Tofu, Tempeh, and TVP-based Products

Fat	5 g/100 g or less, or 5 – 10 g/100g, provided that saturated fat is ≤ 20% of the total fat content
Sodium	450 mg/ 100 g or less

3. FRESH FRUIT AND FRUIT PRODUCTS

Fresh, Frozen, Dried or Canned Fruit

All fresh fruits acceptable.

Fat	No added fat, unless used as a processing aid (< 5 g /100 g)

Dried Fruit Bars

For example, dried fruit bars and fruit straps.

Fat	5 g/100 g or less, or 5 – 10 g/100g, provided that saturated fat is ≤ 20 % of the total fat content.
Sodium	no added sodium
Dietary fibre	3g/100g or more
Energy	≤ 1100 kJ/100g or ≤ 500 kJ/serve

4. FRESH VEGETABLES AND VEGETABLE PRODUCTS

Fresh, Frozen, or Dried Vegetables

All fresh vegetables acceptable.

Fat	No added fat, unless used as a processing aid (< 5 g /100 g, or up to 10g/100g if saturated fat accounts for ≤ 20% of total fat content)
Sodium	No added sodium

Canned Vegetables With or Without Sauce

Fat	5 g/100 g or less, provided that saturated fat is ≤ 20 % of the total fat content
Sodium	300mg /100 g or less

5. MILK, DAIRY PRODUCTS AND ALTERNATIVES

Milk Fluid and Dried (as reconstituted) and Dairy Drinks

Fat	2 g/100 g or less, or 2-4 g /100 g, provided that saturated fat is ≤ 20% of total fat
Calcium	100 mg/100 g or more

Soy and Alternative Beverages

Fat	3.5 g/100 g or less, or 2-4 g /100 g, provided that saturated fat is ≤ 20% of total fat
Calcium	100 mg/100 g or more

Evaporated Milk

Fat	4 g/100 g or less

Frozen Dessert, Ice Cream, Frozen Yoghurt, Gelato, Sorbet, Jelly, Mousse, Custard

Fat	5 g/100 mL (or 50 g) or less, or 5 – 10 g/100 mL if saturated fat ≤ 20 % of total fat content
Energy	≤ 350 kJ /100 mL (or 50 g)

Yoghurt, Soy Yoghurt, or Fromage Frais

Fat	2 g/100 g or less, or 2-4 g /100 g, provided that saturated fat is ≤ 20% of total fat
Energy	≤ 350 kJ /100 g
Calcium	100 mg/100 g or more

6. SNACK FOODS

Savoury Snacks, Biscuits or Crackers

Includes popcorn, potato crisps, extruded snacks, soy chips, biscuits, crackers.

Fat	≤ 5 g /100 g, or 5 –10 g/100g, if saturated fat is ≤ 20% of total fat content
Sodium	500 mg /100 g or less

7. SPORTS DRINKS AND SPORTS BARS

Sports Drinks

(should be isotonic or hypotonic, ie. sodium and sugar content equal to or less than that of blood)

Carbohydrate	4 - 8 g /100 mL
Sodium	≤ 25 mmol / litre

Sports Bars and Miscellaneous Sports Products

Fat	5 g/100 g or less, or 5 – 10 g/100g, provided that saturated fat is ≤ 20% of the total fat content

8. MEDICAL NUTRITIONAL PRODUCTS

eg. Sustagen, Glucerna.
For appropriate medical and/or nutritional purposes.

All acceptable.

9. CONVENIENCE FOODS

Soups (reconstituted, ready to eat)

Fat	2 g/100 g or less, or 2-5 g/100g, if saturated fat is ≤ 20% of total fat content
Sodium	350mg/100 g or less

Prepared Salads (potato, bean or pasta-based)

Fat	5 g/100 g or less, or 5 – 10 g/100g, provided that saturated fat is ≤ 20% of the total fat content
Sodium	350 mg/100 g or less

Pre-prepared Meals (frozen, canned or fresh)

eg. Pasta dishes, casseroles with rice/potato, curry and rice, stir-fry meals and rice, TV dinners.

Fat	≤ 10 g fat/100g, saturated fat must be ≤ 20% of total fat content
Sodium	350 mg/100 g or less

Meat Pies, Pasties, Sausage Rolls, Pizza, etc…

Fat	≤ 10 g fat/100g, saturated fat must be ≤ 20% of total fat content
Sodium	350 mg/100 g or less

10. MISCELLANEOUS

Sauces and Savoury Condiments

Eg. pasta, cook-in sauces, HP sauce, tomato sauce, chutney, relish, pickle, etc.

Fat	5 g/100 g or less, or 5 – 10 g/100g if saturated fat is ≤ 20% of total fat content
Sodium	450 mg/100 g or less

Flavoured Milk Powders (as reconstituted)

Eg. Milo, Nesquik.

Fat	2 g / 100 g or less, or 2 - 4 g / 100 g if saturated fat is ≤ 20% of total fat
Sodium	400 mg / 100 g or less

Sandwich Spreads

Eg. peanut butter, honey, jam, marmalade.

Fat	saturated fat is ≤ 20% of total fat content
Sodium	350 mg /100 g or less

Dips

Fat	10 g/100 g or less
Sodium	450 mg /100 g or less

GENERAL (for all other foods not specifically excluded)

Fat	5 g/100 g or less, or 5 – 10 g/100g, provided that saturated fat is ≤ 20% of the total fat content
Sodium	450 mg/100 g or less

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