





### **Acknowledgement**

This report has been compiled by the European Food Information Council based on input from the Asian Food Information Centre, Canadian Council of Food and Nutrition, International Food Information Council, New Zealand Nutrition Foundation and South African Association of Food Science and Technology.

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Published by the European Food Information Council, [www.eufic.org](http://www.eufic.org)

Tassel House, Rue Paul-Emile Janson 6, 1000 Brussels, Belgium

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## Key Developments

Nutrition labelling is a rapidly evolving topic. Recent key developments are as follows:

- Nutrition labelling was extended beyond packaged foods to chain restaurants and vending machines under the **United States** Patient Protection and Affordable Care Act of 2010. To implement this provision, the U.S. Food and Drug Administration (FDA) issued two proposed regulations in April 2011 in relation to calorie labelling on menus and menu boards in chain restaurants, retail food establishments and vending machines. The FDA has invited public comment on the proposed menu labelling until 6 June 2011 and on vending machines until 5 July 2011. (U.S. FDA, 2011). The Grocery Manufacturers Association (GMA) and the Food Marketing Institute (FMI), representing United States' leading food and beverage manufacturers and retailers respectively, launched a new front-of-pack (FOP) nutrition labelling system called Nutrition Keys in January 2011 (GMA, 2011).
- In October 2010, the **United States** Institute of Medicine (IOM) Committee on Examination of FOP Nutrition Rating Systems and Symbols, whose purpose is to evaluate existing FOP labelling systems and symbols and their underlying nutrition criteria, released their Phase I Report. The IOM Committee recommended a nutrient-specific system that highlights four nutrients per serving: calories, trans fat, saturated fat and sodium. The IOM Committee has embarked on its second phase of work, which focuses on consumer receptivity, understanding, and usability of specific FOP labelling systems. The IOM Committee Phase II Report is expected in 2011.
- The International Food Information Council (IFIC) Foundation, working with Perception Research Services (PRS), has completed consumer research on FOP labelling in the **United States**, commissioned and supported by a grant from the GMA. The online study surveyed 7,363 consumers ages 18-70 to assess consumers' comprehension, comfort level and interpretation of non-branded products using four labelling systems. The IFIC Foundation presented the research to the IOM Committee's Phase II kick-off workshop in October 2010.
- A regulation on mandatory nutrition labelling is still being debated in the **European Union**. The European Parliament and Council of Ministers have adopted their first reading positions. A final agreement could be reached by summer 2011, with the European Parliament expected to adopt its second-reading position in July 2011.
- Regulatory developments are evolving rapidly in Asia. **Korea** became the first country in Asia to implement voluntary traffic light labelling starting January 2011 on the FOP of children's food. In May 2011, **Thailand** became the first country worldwide to make FOP guideline daily amount (GDA) labels mandatory on five snack categories.
- The review of food labelling policy entitled Labelling Logic: Review of Food Labelling Law and Policy, which was launched at the request of the Council of Australian Governments and the **Australia** and **New Zealand** Food Regulation Ministerial Council, was published in March 2011. Entitled Labelling Logic: Review of Food Labelling Law and Policy, the review recommends that voluntary multiple traffic lights FOP labelling system should be introduced, and that such labelling should be mandatory if health claims are made or equivalent endorsements, trade names or marks appear on the label (Blewett et al., 2011).

# INTRODUCTION

Nutrition labelling is the provision of information about the nutritional content of individual food products. It is most commonly applied to pre-packaged food and beverage products, but comes in a variety of formats. Variables include: the type and number of nutrients labelled, the reference values used, whether the information appears on front-of-pack (FOP) or back-of-pack (BOP), and whether the label gives any interpretative guidance to the consumer. Back-of-pack is understood to mean anywhere on pack other than the immediate field of vision.

Nutrition labelling is mandatory in some countries, but only in connection with health and nutrition claims in most. Yet in recent years it has become an increasingly prominent policy issue, following the rise of overweight and obesity on political agendas worldwide.

As a result, nutrition labelling initiatives have proliferated around the globe: governments, international organisations, NGOs, food manufacturers and retailers have developed a variety of FOP and BOP nutrition labelling schemes. Some consumer research and impact assessment work has been carried out to determine which systems work best, i.e. are most likely to be used by consumers, are most user-friendly, but also most accurate and most likely to lead consumers to make balanced choices.

Interpretations of the evidence differ, especially between food and beverage manufacturers and consumer groups, and there is as yet no national, regional or international consensus on what nutrition labelling system works best. Yet there is a growing body of research, increasingly based on empirical evidence, which should help to inform policy-making in the coming years.

This Global Update seeks to provide a comprehensive overview of the state of play on the issue today: what are the major initiatives adopted or in the pipeline to date? How do they work? What do the various stakeholders say? What does the research show? The key objectives are to:

- Give an up-to-date, comprehensive snapshot of the situation worldwide.
- Highlight emerging trends and remaining knowledge gaps.
- Evaluate research and practical experiences to date, so as to identify examples of best practice.
- Suggest ways forward, both for research and for the practical application of nutrition labelling schemes.

The report is structured as follows:

- The Regulatory Framework section summarises the main statutory nutrition labelling rules and regulations in place on an international, regional, and national basis.
- The Private Initiatives section outlines major voluntary initiatives that have been developed.
- The Educational Programmes section reviews public and private programmes designed to educate consumers and enhance awareness of the various public and private nutrition labelling schemes.
- The Debate section looks at the latest developments in the nutrition labelling debate.
- The Consumer Research section explores the status of consumer research on nutrition labelling.
- The Conclusion gives a summary based on the overview of the theory and practice of nutrition labelling carried out in the preceding sections.

# REGULATORY FRAMEWORK

This section explores the main regulatory approaches to nutrition labelling that exist globally, at international, regional and national level.

## 1. Global

**Codex Alimentarius** guidelines are international standards that are not binding upon governments or operators, but constitute an important reference point for national and regional policy-making. They are also used as benchmark standards in cases of international trade disputes.

Codex adopted a set of Guidelines on Nutrition Labelling in 1985 (Codex Alimentarius, 1993). The Guidelines provide:

- Definitions of the terms nutrient, sugars, dietary fibre, polyunsaturated fatty acids, and trans fatty acids;
- Nutrient Reference Values for 14 vitamins and minerals.

The Codex Guidelines recommend that when a nutrition declaration is applied, the declaration of energy, protein, carbohydrates and fat content should be mandatory. Codex specifies that nutrients should be displayed on a 100 g/ml basis, but other units of measurement are also possible (e.g. per package if one package is a single portion or per serving if quantified). The World Health Organisation suggested to the Codex Committee on Food Labelling (CCFL) in April 2007 to consider a "one plus seven" scheme, which would require all prepacked food to label energy plus seven core nutrients (protein, carbohydrates, total fat, saturated fat, trans fat, sodium and sugars). This scheme remains under discussion in the CCFL, though some authorities, such as **Hong Kong, Taiwan** and **South Korea**, have already incorporated it into their nutrition labelling rules.

The CCFL is discussing ways to take forward the WHO's recommendation. The CCFL has outlined issues to be considered when deciding on mandatory nutrition labelling to assist countries considering mandatory and voluntary nutrition labelling. The CCFL has decided not to include references to FOP labelling or the use of simplified interpretative schemes in the issue paper (Codex, 2010b). The CCFL has also approved a draft revision of the Guidance on Nutrition Labelling concerning the list of nutrients that are always declared on a voluntary or mandatory basis; the procedure is at Step 7 in the eight-step approval process. There is general support for the inclusion of saturated fats and total sugars in the list of mandatory nutrients to be labelled, as well as sodium, although national authorities could express the equivalent amount of salt. In May 2010 the CCFL decided not to include trans fatty acids, dietary fibre and added sugar in the mandatory list (Codex, 2010b). The CCFL is also negotiating Proposed Draft Recommended Principles and Criteria for Legibility of Nutrition Labelling". These items were again discussed at the CCFL meeting on 13 May 2011 in Quebec, Canada. An agenda can be downloaded from <http://www.codexalimentarius.net/web/current.jsp>. The revised guidance will be forwarded to the Codex Commission for final adoption at its meeting in July.





## 2. Existing rules and regulations

Existing national regulations on nutrition labelling broadly follow two regulatory approaches, and typically cover only BOP labels:

1. **Mandatory:** Those which make nutrition labelling mandatory (**United States, Canada, Mexico, Mercosur countries, Israel, India, Indonesia, Hong Kong, South Korea, Malaysia, Taiwan, Thailand, Australia and New Zealand**) in the absence of a nutrition or health claim. They define which nutrients must be listed and on what basis (e.g. per 100 g/ml, per serving). They also allow voluntary initiatives to provide additional nutrition information.
2. **Voluntary:** Those which provide state-sponsored guidelines to be followed voluntarily (**European Union (EU) member states, Gulf Cooperation Council countries, Venezuela, Chile, Turkey, China, Singapore, Philippines, Japan, Mexico, Kenya, Mauritius, Nigeria and South Africa**). They define which nutrients should be listed and on what basis, but operators can generally opt-out of using the guidelines if they do not make a health or nutrition claim or if the food is not for special dietary uses.

### 2.1 Mandatory back-of-pack nutrition labelling

#### NORTH AMERICA

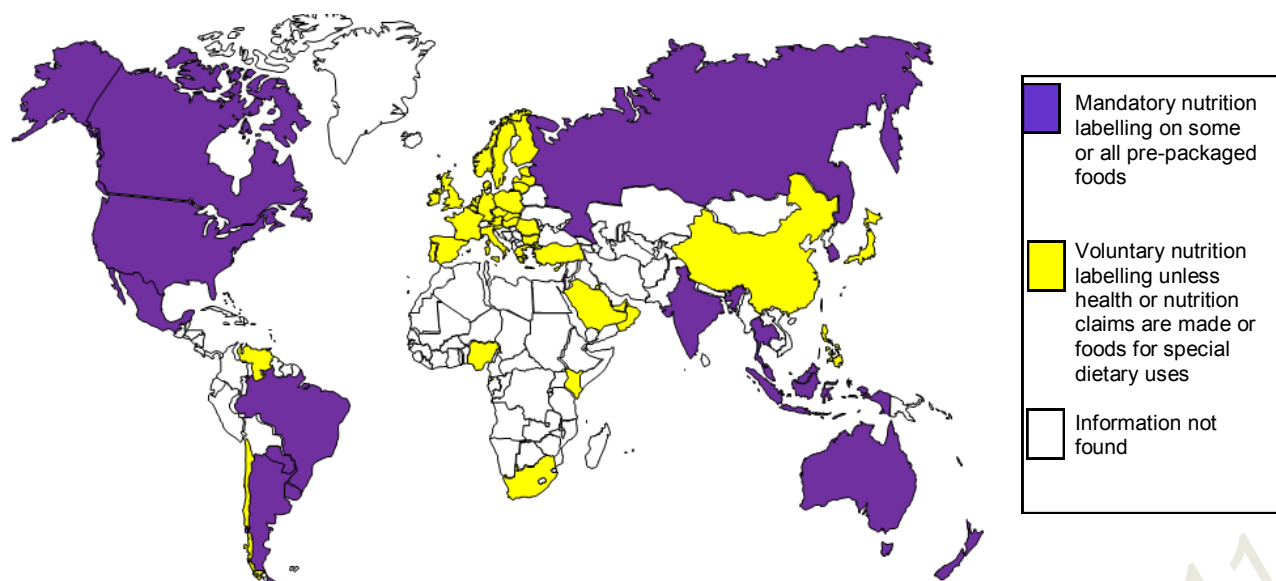
Nutrition labelling regulations are detailed and mandatory in North America for most pre-packaged food products, regardless of a nutrition or health claim being made.

The **United States** Congress passed the Nutrition Labeling and Education Act (NLEA) in 1990 and was finalized in 1993 after the notice-and-comment rulemaking period. The NLEA mandates the provision of nutrition information on packaged foods via the Nutrition Facts Panel (NFP). The NFP lists nutrients that are of public health significance and are needed by consumers to implement dietary recommendations in grams and percent daily values. The percent daily value (DV) levels were updated in 2008 in light of the 2005 national dietary guidelines and the Institute of Medicine's report, "Dietary Reference Intakes: Guiding Principles for Nutrition Labeling and Fortification". New daily values were established for infants, children four years and under and pregnant and lactating women in a non-binding guidance document for industry. Previous daily values were set for adults and children over the age of four. The NLEA does not apply to meat and poultry products which are regulated by the U.S. Department of Agriculture (USDA). However, the USDA has voluntarily put in place nutrition labelling regulations consistent with those issued by the Food and Drug Administration (FDA) (U.S. FDA, 1995).

**Canada's** regulations also require the provision of nutrition facts (Canada Gazette, 2002). Canadian and U.S. Nutrition Facts Panels require nutrition information on calories, fat, saturated fat, trans fat, cholesterol, sodium, carbohydrates, fibre, sugar, protein, vitamin A, vitamin C, calcium and iron. In

Nutrition Facts		
Serving Size 1 cup (35g)		
Servings Per Container 10		
Amount Per Serving	Cereal	Cereal with 1/2 cup Skim Milk
<b>Calories</b>	130	170
Calories from Fat	0	0
% Daily Value**		
<b>Total Fat</b> 0g*	0%	0%
<b>Saturated Fat</b> 0g	0%	0%
<b>Trans Fat</b> 0g	0%	0%
<b>Cholesterol</b> 0mg	0%	0%
<b>Sodium</b> 200mg	8%	11%
<b>Total Carbohydrate</b> 30mg	10%	12%
Dietary Fiber 4g	16%	16%
Sugars 18g		
<b>Protein</b> 3g		
Vitamin A	25%	25%
Vitamin C	25%	25%
Calcium	0%	15%
Iron	10%	10%
*Amount in Cereal. One half cup skim milk contributes an additional 40 calories, 65mg sodium, 6g total carbohydrates (6g sugars), and 4g protein.		
**Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:		
Calories: 2,000 2,500		
Total Fat	Less than 65g	80g
Sat Fat	Less than 20g	25g
Cholesterol	Less than 300mg	300mg
Sodium	Less than 2,400mg	2,400mg
Total Carbohydrate	300g	375g
Dietary Fiber	25g	30g
Calories per gram: Fat 9 • Carbohydrate 4 • Protein 4		

Image credit: U.S. Food and Drug Administration, 2011

**Figure 1. Global overview of mandatory and voluntary nutrition labelling**

July 2010, the Health Canada Sodium Working Group recommended amending the *Food and Drug Regulations* to ensure that serving sizes used in the Nutrition Facts table are as uniform as possible and to lower the basis level of sodium Daily Value from 2,400mg to 1,500 mg (Health Canada Sodium Working Group, 2010). There was a Consultation by Health Canada on Establishing Sodium Reduction Targets in January 2011.

Mandatory nutrition labelling was implemented in **Mexico** starting 1 January 2011 under NOM-051 regarding labelling requirements for pre-packaged foods. The information may be displayed anywhere on the package and must comply with NOM-86. The Mexican Recommended Dietary Intake (RDI) must be calculated and displayed for energy, protein, carbohydrates (including sugar), fat, dietary fibre, sodium and nutrients for which a health claim is made or any other relevant nutrients. NOM-051 exempts single ingredient products, herbs, spices and mixes, coffee extracts, tea infusions, fermented vinegars and purified water from this requirement unless health claims are made. Products for which the largest surface is less than 78 cm<sup>2</sup> are also excluded but obliged to include a telephone number or webpage where consumers can obtain nutritional information. The energy content must be expressed as either kJ (Kcal) or in Cal (kJ) per 100 g/ml or by serving in packages containing several servings or by package if it contains only one serving. Bilingual Nutrition Facts are permitted, but the RDI values must be calculated if different from the U.S. Daily Values (USDA, 2010).

## **SOUTH AMERICA**

A MERCOSUR resolution requires nutrition labelling in all four member countries (**Argentina, Brazil, Paraguay, Uruguay**) as of 1 August 2006 (World Health Organisation, 2004). The main changes were the compulsory addition of nutritional information per serving and new mandatory nutrients (energy, carbohydrates, proteins, total fats, saturated fats, trans fats, dietary fibre and sodium). There is no recommended value for trans fats. Other nutrients (cholesterol, soluble and insoluble fibre) may be displayed voluntarily. Vitamins and minerals may be included only if their amount per serving is more than 5% of the Recommended Daily Intake established by FAO/WHO. Nutrition information must be expressed in grams or millilitres per serving and as a percentage of daily value (%DV) (Olivera Carrion, 2011).

## RUSSIA / MIDDLE EAST

**Russia's** General Requirements for Consumer Information Regarding Foodstuffs (GOST P 51074-2003) came into effect on 1 July 2005. Nutrition information must be included on the label if more than 2% of the recommended daily allowance of proteins, fats, carbohydrates or calories is included in a 100 gram serving. Vitamins and minerals must also be included if a 100 gram serving contains more than 5% of the recommended allowance (U.S. Foreign Agricultural Service, 2009).

**Israel** introduced mandatory labelling of calories, protein, fat, and carbohydrates on pre-packaged food in 1993. (World Health Organisation, 2004)

## ASIA-PACIFIC

While Australia and New Zealand have mandatory nutrition labelling in place, it is required in Asian countries on a more limited but quickly growing basis. Malaysia, Hong Kong, Taiwan and India are the only countries in Asia which require nutrition labelling on most commonly used foods, while South Korea and Indonesia require it only on certain product groups.

**Malaysia** has legislation requiring nutrition labelling on over 50 categories of commonly consumed foods, as well as for foods with special dietary uses, nutrition claims, and fortified foods (Siong, 2007). Mandatory nutrition labelling has been enforced since 2005 under the Food Act 1983 (Act 281) & Regulations. Labelling guidelines follow the United States Department of Agriculture's format. The declaration of energy, protein, carbohydrate, fat, and total sugars are mandatory per 100g/ml and per serving. Other vitamins and minerals may only be presented if they are listed in the Nutrient Reference Value (NRV) and present in significant amounts (i.e. at least 5% of NRV per serving). Dietary fibre and cholesterol may also be declared.

In **Hong Kong**, the Food and Drugs Regulation 2008 on "Requirements for Nutrition Labeling and Nutrition Claim" was amended in 2008 to require all prepacked food to label energy plus seven core nutrients (protein, carbohydrates, total fat, saturated fat, trans fat, sodium and sugars) and any nutrient for which a claim is made. Information will be listed in three different ways: "per 100g/per 100 ml", "per serving" and "per package" (Hong Kong Centre for Food Safety, 2010). The regulation came into force on 1 July 2010 after a two-year grace period. A Food Composition Database disseminates the latest updates of the Labelling Scheme on Nutrition Information to ease industry's implementation of the new labelling requirements. Nonetheless, the Consumer Council and Centre for Food Safety are concerned that operators will fail to meet the requirements as their recent market survey of 80 pre-packed beverages found that 9 of the 16 products bearing health claims contained more sugar than was claimed on the label (Hong Kong Government, 2009).

In **Taiwan**, all packaged foods must have a nutritional label in the Chinese language pursuant to the 2008 Regulations on Nutritional Labelling for Packaged Foods. The label must provide information about the energy, protein, fat, saturated fat, trans fat, carbohydrates and sodium content of the product. Additional nutrients declared in a nutrition claim (if any) and other nutrients may be voluntarily declared. Each nutrient may be further expressed as a percentage of Daily Value of Nutrient Intake.

**South Korea** has required nutrition labelling on bread, noodles and retort foods since 2003 and on confectionery and beverages since May 2005. As of July 2007, snacks and infant formula were also required to display nutrition labels. Foods covered by the nutrition labelling requirements and foods with special dietary uses or nutrition claims must display calories, carbohydrate, protein, fat and sodium. The labelling of additional nutrients (sugar, saturated fat, trans fat and cholesterol) was made mandatory as of July 2007 (Patel, 2008). Nutrition labelling is based on nutrient reference values (NRV), which establish quantities of 32 nutrients to be used as a reference for manufacturing and labelling standards. The Korean

Food and Drug Administration has also developed recommendations for voluntary FOP labels (see section 3.2.1).

In **Thailand**, mandatory nutrition labelling previously only applied to foods which made nutrition claims, foods using nutrition for sales promotion, foods targeting certain groups of consumers for sales promotion and other foods as prescribed by the Thai Food and Drug Administration. Similar to the United States, Thailand requires companies to list energy, fat, carbohydrates and protein, as well as saturated fats, cholesterol, dietary fibre, sugar, vitamin A, vitamin C, calcium, iron and nutrients as claimed (Gautier, 2010). However, in response to the WHO Global Strategy on Diet, Physical Activity and Health, the Thai FDA issued a notification in 2007 of plans to introduce mandatory nutrition labelling for food commonly consumed by children and made FOP nutrition labels mandatory in May 2011 (see section 3.1.2).

**Indonesia** requires nutrition labelling on a more limited basis for foods containing or enriched with vitamins, minerals and/or other added nutrients, and for certain types of foods, such as baby foods, dietary foods, milk and milk products and other foods as specified by the Director-General. For such foods and foods with voluntary nutrition labels, the following information must be displayed per serving and per 100 g/ml: energy, protein, total carbohydrate and fat. In addition, the breakdown of the percentage of energy derived from fat, protein and carbohydrates must be displayed. The amounts of other nutrients considered relevant for maintaining good nutritional status as required by specific regulations must also be declared in metric units and as percentages of the Recommended Dietary Allowance.

In **India**, the mandatory labelling of nutrition facts on packaged foods was adopted in September 2008 and took effect on 19 March 2009 (Asian Food Information Centre, 2009). The nutrition panels must mention: energy value in kcal, protein, carbohydrates, including sugar, and fat in grams; other vitamins and minerals must be shown in metric units. The rules also mandate that foods using hydrogenated fats or bakery shortenings must specifically declare this on the label, and mention that they contain trans fat.

Food companies in **Australia** and **New Zealand** are required by the Australia New Zealand Food Standards Code to provide information to consumers about nutrient content (protein, carbohydrate, sugars, fat, saturated fat and sodium) and energy on a BOP Nutrition Information Panel for both per serving and per 100g/ml for most packaged food with optional additional nutrients (Food Standards Australia New Zealand, 2009). However, the nutrition labelling provisions are currently under review (see section 3.2).

## 2.2 Voluntary back-of-pack nutrition labelling unless claims are made

Other countries make nutrition labelling mandatory only when a nutrition or health claim is made. This is the case for all EU Member States, most Southeast Asian countries (with the exception of the cases mentioned above), and some Latin American, Middle Eastern and African countries. In countries where nutrition labelling is voluntary and when no nutrition or health claims are made, operators may choose to provide nutrition information. Some countries that follow this model have developed nutrition labelling guidelines that they encourage, but cannot force, operators to adopt.

### SOUTH AMERICA

The provision of nutrition labels on pre-packaged food in **Chile** is voluntary. Guidelines follow Codex suggestions. **Venezuela** requires nutrition labels only for foods with special dietary uses (World Health Organisation, 2004).

## EUROPE

The **European Union** (EU) has had a Nutrition Labelling Directive in place since 1990 (European Union, 1990). The Directive is binding on EU Member States and applies to all packaged foods. The directive provides definitions of certain nutrients (e.g. protein, carbohydrate, fat, sugars, saturates, monounsaturates, polyunsaturates, and fibre) and conversion factors to derive the energy value of certain nutrients (e.g. fat 9 kcal/g – 37 kJ/g). It states that when nutrition labelling is provided, the following nutrients must be provided per 100 g/ml in the following order: energy value, protein, carbohydrate, sugars, fat, saturates, fibre and sodium. Additional information, such as per serving or per portion and optional nutrients may be listed (e.g. starch, monounsaturates, polyunsaturates, cholesterol, vitamins and minerals listed in the annex).

Importantly, Directive 90/496 makes the declaration of nutrients mandatory only when a health or nutrition claim is made. Nutrition labelling is otherwise voluntary in the EU. Directive 90/496 is a so-called "maximum harmonisation" directive, meaning that EU Member States cannot impose mandatory legislation on nutrition labelling over and above the provisions of the EU Directive. Nonetheless, Member States may develop state-endorsed nutrition labelling guidelines and encourage the private sector to adopt them voluntarily.

The **EU** Nutrition Labelling Directive is currently under review as part of the European Commission's strategy to combat obesity in the EU, on the grounds that improved food labelling would enable consumers to make more balanced dietary choices. A proposal was tabled in 2008, putting forth a mandatory nutrition declaration of energy, fat, saturated fat, carbohydrates, sugar and salt on the FOP per 100g/ml. In addition, it calls for the nutrition declaration to be expressed as reference daily intakes. The proposed reference intakes for the main nutrients are as follows: energy: 8400kJ/2000 kcal; total fat: 70g; saturates: 20g; carbohydrates: 230g; sugars: 90g; salt: 6g. These values were endorsed in a scientific opinion from the European Food Safety Authority (EFSA) in March 2009 with the exception of carbohydrates (EFSA: 260g). EU legislators are currently debating whether the mandatory nutrition declaration should be only on the BOP or also on the FOP (see section 3.2).

## AFRICA/MIDDLE EAST

Nutrition labelling is voluntary in the Gulf Cooperation Council members (**Bahrain, Kuwait, Oman, Qatar, Saudi Arabia** and the **United Arab Emirates**) unless the food is for special dietary use (World Health Organisation, 2004).

Similarly, in **Nigeria** and **Kenya**, nutrition labelling is required only for foods with special dietary uses. Kenya's nutrition labelling standards draw on Codex guidelines (World Health Organisation, 2004). **Mauritius** requires the labelling of protein, fat, carbohydrate, vitamin and mineral content on infant foods, per 100g of the packaged food (World Health Organisation, 2004).

**South Africa** published a regulation in March 2010 which makes the nutrition declaration mandatory when a nutrient claim is made and provides guidelines for voluntary nutrition information; when no claim is made, theoretical analysis may be used. The regulations allow for voluntary labels to contain nutrition information, of the manufacturer's choice, per serving and per 100g/ml, provided the information can be substantiated by the South African Food Composition Tables or another reputable Food Composition Database (South African Department of Health, 2007). The regulation changes RDAs for vitamins and minerals to the Codex-defined Nutrient Reference Values (NRVs), and states that nutrition information shall be given in tabular format. The regulation will take effect 1 March 2012 for products produced on or after this date.



## ASIA-PACIFIC

In Southeast Asian countries, with the exceptions mentioned above, the format and requirements for nutrition labelling when a health or nutrition claim is made differ widely. Some countries follow the Codex format (**China**), while others (**Thailand**) follow the U.S. FDA format for BOP nutrition labels.

**China's** Ministry of Health introduced a set of non-binding guidelines on 1 May 2008, with the intention for companies to comply by 30 April 2010. The guidelines provide for a nutrition fact chart on prepacked food that specifies energy, protein, fat, carbohydrates and sodium per 100g/ml or per serving as a percentage of the nutrient reference value (NRV). Saturated fat, cholesterol, sugar, vitamin and mineral content remain optional for operators that choose to comply with the guidelines. The guidelines also set out font size restrictions and state that the Ministry of Health may set further mandatory nutrition labelling requirements for certain types of foods in accordance with the needs of consumers (Halliday, 2008).



Nutrient information in a nutrition information panel is required by the Food Regulations in **Singapore** on pre-packed foods for which nutrition claims are made but is not mandatory otherwise. The regulations stipulate that the number of servings per package and the serving size have to be declared, together with a metric and common household measurements e.g. pieces, teaspoon, etc. The nutrition panel must specify energy, fat, carbohydrates and protein with the nutrients as claimed.

Only enriched or fortified foods, foods for special dietary uses and foods that bear nutrient claims require nutrition labelling in the **Philippines**. For such cases, energy, fat, carbohydrates and protein need to be declared. However, a proposal in December 2010 (House Bill 1469 - Nutrition Labelling Act of 2010) would make nutrition labelling mandatory. Required information would include the total calories derived from any source and the following nutrients in grams per serving: total fat, saturated fat, cholesterol, total carbohydrates, complex carbohydrates, dietary fibre, sugar, total protein and sodium. The amounts of vitamins and minerals which would be beneficial for consumers should also be listed as percentages of Recommended Energy & Nutrient Intakes (%RENI). The bill also states that the nutritional content should appear conspicuously and should be easily legible, meaning it should distinctly contrast with the other information on pack in its typography, layout, colour, embossing or moulding. The Bill is currently being discussed in the House of Representatives and it is not yet known when the new rules could be implemented.

In **Japan**, nutrition labels must follow the "Nutrition Labelling Standards," which fall under Article 31 of the Health Promotion Law, requiring food labels to indicate energy, protein, fat, carbohydrates (which may be represented by sugar or food fibre) and sodium per 100g, 100ml, serving, package or other unit. The Japanese Ministry for Agriculture, Forestry and Fisheries has stated that it is possible to indicate the nutritional content of fresh produce as long as it complies with the proper labelling methods in the Standards. Products on the list of Foods for Special Dietary Use, which are regulated under Article 26 of the Health Promotion Law, must include the health benefits, recommended intake method and estimate of specified nutrients required in addition to the above. This list was partly revised in April 2009 to remove some of the more general "medical foods for the ill" (e.g. low calorie food or low sodium food) to differentiate between general health foods and foods for specified illnesses that are vital for supporting life or providing medical treatments (Japan Food Information Council, 2009).

### 3. Front-of-pack labels

There is a growing opinion that nutrition information should be made easier to understand and use. The variety of FOP nutrition labels is also a concern for some opinion formers, which is putting pressure on regulators to harmonise FOP labels. As a result, many governments are discussing mandatory or voluntary guidance for placing nutrition information on the FOP. Section 3.1 describes the FOP schemes that have already been endorsed by governments. Section 3.2 presents an overview of countries that are still considering various regulatory options for FOP labelling.

#### 3.1 Existing government-endorsed front-of-pack labels

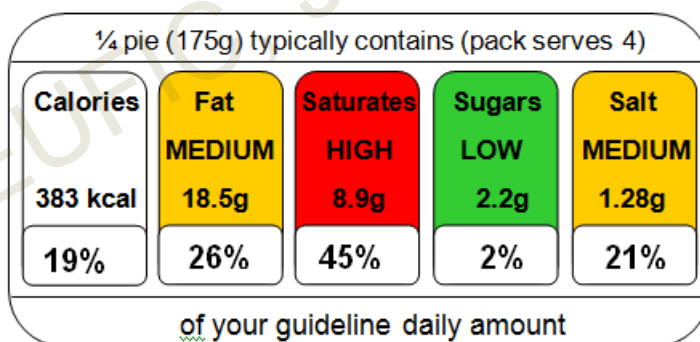
Some countries already have in place voluntary guidelines for interpretative FOP labels, which generally fall under one of three schemes:

##### 3.1.1 Judgement of nutritional quality (e.g. colour-coding)

This scheme ranks foods from the most advisable to the least on the basis of their nutrient content (see box on Nutrient Profiling).

##### EUROPE

The most prominent example of this scheme is the **UK** Food Standards Agency's (FSA) "traffic lights" scheme for FOP labels, which uses the colours red, amber and green and/or text ("high, medium, low") to show whether the nutrient content of a food product is high, medium or low (see Appendix ii for detail). The FSA updated its recommendations for FOP labels in



*Image Credit: UK Department of Health*

March 2010, calling for a single FOP label that combines %GDAs per portion and traffic lights or text (high, medium, low) or all three elements. The foreseen guidance to implement the recommendations was put on hold following the change in Government. As of September 2010, responsibility over nutrition and labelling for England was shifted from the FSA to the Department of Health, but the UK continues to support voluntarily use of the traffic lights scheme under the EU's proposed "National Schemes" (see section 3.2).

The **Danish** Veterinary and Food Administration developed a similar scheme that categorises foods into "Eat Most", "Eat Less" and "Eat Least" categories, and launched a corresponding voluntary FOP label in 2007 for various food groups, including biscuits, cakes, ready meals and breakfast products. The label did not have a wide uptake from operators, and in 2009 Denmark adopted the Nordic Keyhole label (see section 3.1.3).

##### ASIA

**South Korea's** national assembly adopted in April 2009 a revision to the Special Act on Children's Dietary Life Safety Management. The revision introduced voluntary traffic light labelling and percentages of recommended daily intake (%RDI) on children's food for total

fat, saturated fat, sugar and sodium starting 1 January 2011. The Korean Food and Drug Administration (KFDA) and Ministry of Health, Welfare and Family released draft voluntary nutritional standards to underpin the FOP labels for "high-calorie foods with low nutritional value" and the affected list of foods and beverages, which were developed in consultation with stakeholders (Korean Food and Drug Administration, 2009). According to the plan, the red label is recommended to appear on snacks if one serving contains more than 9 grams of fat, 4 grams of saturated fat or 17 grams of sugar, and on meals containing more than 12 grams of fat, 4 grams of saturated fat or 600 mg of sodium per serving. According to KFDA simulation tests, at least 74 percent of chocolate products, 58 percent of ice cream products and 42 percent of bread would be labelled with a red traffic light (Song, 2010).

In February 2011, the KFDA published a recommended list of products that should provide nutritional information. The list specifies which nutrients should be displayed in the case of pre-packaged foods for children.

The KFDA is monitoring its effectiveness and will decide whether to make the scheme mandatory and/or to extend it.

#### KFDA's Recommended List of Products

1. Foods that should have fat, trans-fat, sugar and sodium levels on the labels:

- Bread
- Chocolate
- Processed milk
- Sausage (mixed with fish)
- Instant noodle (cup)
- Fruit and vegetable juice
- Kimbab (pre-packaged)
- Hamburger
- Sandwich

2. Foods that should have sugar on the labels:

- Candy
- Ice cake
- Fermented milk
- Soda drink
- Yoghurt drink
- Mixed drink

## Nutrient Profiling

Nutrient profiling is the categorisation of foods according to their nutritional composition, which involves assigning values to select nutrients based on certain criteria. Values are determined by how much of a nutrient a food contains per serving or per 100 g/ml. These values are used to determine whether the presence of a nutrient is "high" or "low."

The purpose of nutrient profiling is to compare the nutrient content of foods across and within different food groups. Various nutrient profiling systems have been developed throughout the world by public and private bodies to serve three main purposes:

- 1) Provide information to consumers,
- 2) Set criteria for making nutrition and health claims on food products, and
- 3) Define responsible practices for food advertising and marketing to children.

This report focuses on how nutrient profiling is used to underpin nutrition labelling. Nutrient profiling in this respect is used as the basis for interpretive symbols, which are intended to help consumers make healthier choices.

### 3.1.2 Percent of daily consumption (e.g. percentages of daily intake)

Food groups or nutrients are shown as a proportion of recommended daily consumption under this scheme.

#### EUROPE

In **Germany**, the Federal Ministry of Food, Agriculture and Consumer Protection (BMELV) updated its voluntary guidelines for food packaging in July 2010, which recommends the FOP display of calories, fat, sugar, saturated fat, and salt or sodium in units per portion and how that translates into a percentage of GDAs. The guidelines call on industry to establish commonly defined consumption units.



Image credit: German Federal Ministry of Food and Agriculture, 2010

**France's** food standards agency (AFSSA) recommends using GDAs which are defined at European level (AFSSA, 2008). In addition to energy, it suggests the inclusion of total carbohydrates (of which total simple carbohydrates), proteins, total fats (of which saturated fat) and salt or the equivalent. Secondary nutrients could be included to inform consumers about the food's positive impacts on health.

The **Turkish** Ministry of Agriculture and Rural Affairs published on 4 December 2008 draft changes to the Turkish Food Codex Regulations which would require GDAs for energy, total sugar, total fat, total saturated fat and salt. (Food Navigator, 2009a). Comments were gathered and the final communiqué was expected end 2009 (United States Foreign Agricultural Service, 2011).

#### Asia-Pacific

In **Thailand**, the Food and Drug Administration adopted a regulation in May 2011 for mandatory FOP GDAs on five snack categories, making it the first country to adopt mandatory FOP nutrition labels. The FOP label will inform consumers about the amount of calories, fat, sugar and salts in the following five snack groups: potato crisps, popcorn, biscuits, crackers and cream-filled wafers. The label will also display the percentage of recommended daily amounts per serving based on Thai nutrient reference values and the absolute amount per serving. While the Thai FDA was under pressure to colour code the GDAs with traffic light colours, the Thai FDA decided not to require colour-coded labels.

### 3.1.3 Health logo (e.g. symbol)

Food products that meet certain nutritional criteria receive a health logo (e.g. heart symbol, checkmark).

#### EUROPE

The oldest example of a national health logo is **Sweden's** "Green Keyhole," which was established in 1989. Labelling products with the logo is free of charge and voluntary. There are around 2500 keyhole products on the market. The Keyhole label can also be used on menus and recipes. Municipal environmental and public health authorities oversee keyhole labelling.



*Image Credit:  
Livsmedelsverket  
National Food  
Administration,  
2007*

The Nordic Ministerial Council, which includes **Norway, Denmark and Sweden**, adopted a common Nordic Keyhole nutrition labelling symbol, based on the Swedish Keyhole, and Nordic Nutrition Recommendations on 17 June 2009; Iceland is considering adoption as well. By 2012, the Nordic Council plans to evaluate the revised Keyhole criteria, carry out an information campaign for producers and establish rules for marketing in relation to recipes. As of May 2010, approximately 2,500 pre-packaged Keyhole-labelled food products are available in Sweden, 500-600 in Norway and at least 500 in Denmark (Norden, 2010). Its future is still under discussion in the Food Information proposal in terms of whether such national labelling would in future be permitted.

The **Finnish** authorities do not use the Keyhole but already have a similar label since 2000, the "Heart". Products that carry the label have lower amounts of fat and salt in their respective product groups. The use of the symbol has recently been extended to catering (Codex, 2010a). Finland was said to be considering the possibility of incorporating the Keyhole criteria into the Finnish scheme, but this has been deemed unlikely to happen in the near future.

The **Netherlands'** Ministry for Health, Welfare and Sport announced in December 2010 that it will formally endorse the voluntary use of a single national food choice logo based on the "Choices" scheme as part of the government's nutrition policy (see Private Initiatives section 1.4). An agreement was reached in March 2011 with the Choices International Foundation and Albert Heijn supermarket chain to use different coloured Choices logos to distinguish between basic products (e.g. vegetables) and healthier options within non-basic product categories (e.g. snacks). Products carrying the new stamp must meet a set of nutritional criteria which were developed by an independent scientific committee and which are aligned with the Official Dutch Guidelines for Food Choice published by the Netherlands Food Centre. Approximately 6,600 Dutch products will carry the new food choice logo and the logo will be gradually introduced throughout 2011 (Food Navigator, 2011). The new logo will constitute a claim under the EU's Health and Nutrition Regulation, similar to the Scandinavian Keyhole symbol (EU Food Law, 2011).

**Switzerland** has dropped the idea to develop and introduce a voluntary and uniform FOP 'healthy choice label' for foods and beverages. The Swiss Federal Office of Public Health had in mind a system based on a successfully introduced European labelling system. The Swiss Society for Nutrition reviewed several existing labelling systems and prepared recommendations on qualifying criteria and organisational structures, monitoring processes and marketing and communication measures. The Federal Office had planned to create an independent nutrition organisation to develop, adopt and supervise the label (Swiss Society for Nutrition, 2009). However, the Swiss Nutrition Society concluded in September 2010 that the introduction of a 'healthy choice label' would not be successful as industry was unwilling to take up the voluntary scheme for various reasons, including cost and practicality. The Federal Health Office has decided instead to reach out directly to consumers, health organisations and industry to influence consumers to make healthier choices (World Radio Switzerland, 2010).



## ASIA- PACIFIC

Health logos are gaining ground in Asia, as **Malaysia** has announced in 2009 the re-introduction of a voluntary Healthier Choice Symbol programme. The programme identifies five categories of food: cereal-based foods, canned foods, fats and oils, soft drinks and beverages and dairy products. However, the implementation of the programme has been put on hold and the Ministry of Health is considering alternative systems. A key challenge is the programme's incompatibility with the health logo system in Singapore. Meanwhile, **Thailand** introduced in April 2009 a voluntary label for snacks, baked foods and sweets which have been certified by the Health Department as having 25% reduced fat, sodium and sugar. The **Philippines** unveiled in December 2010 a voluntary "Good-For-You" certification scheme administered by the Department of Health for food labels and menu cards. However, the "Good-For-You" Seal must be altered due to trademark issues to a "Healthier for You" Seal and it is expected to be implemented by July 2011.

In **Australia** and **New Zealand**, FSANZ proposed in April 2008 a draft Standard for Nutrition, Health and Related Claims which sets nutrient profiling scoring criteria for foods carrying a health claim, which includes FOP health logos. The draft Standard exempts "endorsements" of health logos from independent organisations, however, which are "formed for nutritional or health purposes and structured in a way that guarantees that suppliers of foods cannot influence the criteria used by the endorsement program" (Food Standards Australia and New Zealand, 2008b). The Ministerial Council, at their meeting in June 2008, requested that FSANZ review this draft standard on the grounds it is not consistent with existing policy guidelines set by the Ministerial Council (Australian Food Grocery Council and New Zealand Nutrition Foundation, 2009). The Ministerial Council will consider FSANZ's Review on Food Labelling Law and Policy report and the draft Standard in October 2011 (FSANZ, 2011).

The Health Promotion Board (HPB) of **Singapore** introduced the "Healthier Choice Symbol" on packaged food products. The symbol identifies foods that are generally lower in fat, saturated fat, sodium and sugar and some products that are higher in dietary fibre and calcium. Each food category must adhere to a separate set of nutritional criteria. According to the HPB, the symbol can be found on around 2,400 products across over 70 food categories, including breakfast cereals, snacks, beverages and sauces. In addition, the Healthier Snack Symbol (HSS), a variant of the Healthier Choice Symbol, was introduced for snack foods including plain biscuits and cookies, crisps, ice-cream and plain cakes. Snacks which carry the symbol are generally lower in fat, saturated fat, sodium or sugar compared to regular snacks.

## 3.2 Regulatory framework in the pipeline

Some governments are still deliberating whether to regulate FOP labels, and if so, which format to endorse.

## EUROPE

The EU legislative debate is the most advanced debate on FOP labels, as the aforementioned proposal to amend the **EU** Nutrition Labelling Directive was tabled in 2008 and attempts to harmonise FOP labels. The proposal states that the nutrition declaration should be expressed as reference daily intakes on the FOP per 100g/ml or per portion under certain circumstances, but allows EU Member States to decide whether to accompany this information with interpretative symbols under voluntary "National Schemes."

Negotiations between the European Parliament and Council of Ministers are ongoing. The co-legislators remain split on several key aspects of the proposal, but an agreement could be reached by summer 2011. The Council of Ministers adopted its first-reading position in February 2011. It supports a mandatory nutrition declaration for energy, fat, saturates,

carbohydrates, protein, sugars and salt per 100g/ml with the possibility to indicate these as a percentage of reference intakes (GDAs). Repeating some elements on the FOP and per portion would be voluntary and in addition to the mandatory information. The Council maintained the proposal for additional forms of expression for the nutrient declaration under "National Schemes", subject to certain criteria (e.g. they are supported by evidence of understanding by the average consumer). The legibility of the nutrition declaration is also an element of debate.

The European Parliament is reviewing the Council of Ministers' amendments and will adopt its second-reading position on 5 July 2011. Its first reading position, adopted in June 2010, supported mandatory FOP labelling for energy, fat, saturates, sugars and salt, with the energy declaration in the bottom right-hand corner. The Parliament called for the mandatory BOP labelling of ten nutrients, including natural and artificial trans fats and for these elements to be supported by GDAs and expressed per 100g/ml and per portion. At its first reading position, the Parliament rejected traffic light labels and the possibility to allow EU member states to endorse interpretative symbols under voluntary "National Schemes". However, in its recommendation for the European Parliament's second reading position on 19 April 2011, the European Parliament's Committee on Environment, Public Health and Food Safety (ENVI) supports keeping the possibility for EU member states to endorse voluntary "National Schemes". ENVI also supported the Council of Ministers' rejection of mandatory FOP labels and the expression of the nutrition declaration per 100g/ml. Once the European Parliament has adopted its second-reading position, it will go to the Council of Ministers for a second-reading. Once adopted, another three to five years would be needed for full implementation.

## NORTH AMERICA

The **United States** Food and Drug Administration (FDA) is also considering whether to harmonise FOP labels, following a petition filed in November 2006 by the Center for Science in the Public Interest (CSPI) for the FDA to create a national FOP label (United States General Services Administration, 2010). Senator Tom Harkin (D-IA), chairman of the Senate agriculture, nutrition, and forestry committee, stated his support for the FDA to establish "consistency to these many different systems of nutrition symbols" (MSNBC, 2007). The FDA Center for Food Safety and Applied Nutrition held a hearing on the use of symbols to communicate nutrition information in September 2007. In October 2009, the FDA announced the possibility of pursuing new regulation in an effort to unify FOP labelling systems and reduce consumer confusion. The FDA also drafted a guidance letter to industry regarding point of purchase food labelling (United States Food and Drug Administration, 2009). The FDA and USDA stated that they also planned to work with retailers, private design experts, food manufacturers, nutrition experts and health officials from other countries to ensure that a comprehensive research agenda on FOP labelling is conceived and carried out.

The FDA and the Centers for Disease Control and Prevention commissioned a study by the Institute of Medicine (IOM) entitled "Examination of Front of Package Nutrition Rating Systems and Symbols" (Institute of Medicine, 2010). In mid-October 2010, IOM Committee on Examination of Front of Package Nutrition Rating Systems and Symbols released their Phase I Report. After reviewing 20 front-of-pack labeling systems, the IOM Committee recommended a nutrient-specific system that highlights four nutrients of greatest concern - calories, serving size, trans fat, saturated fat, and sodium. Subsequently, the IOM Committee embarked on their second phase of work focused on consumer receptivity, understanding, and usability of specific FOP labeling systems (Institute of Medicine, 2010). The Phase II report outlining their recommendations is expected in 2011.

The Health **Canada** Sodium Working Group (SWG) recommended in July 2010 that the nutrition labelling system should be improved to facilitate consumer understanding and use. It called on Health Canada to review nutrition labelling systems used worldwide, research into

consumer use and the need to enhance the current system. It suggested that the recommendations be used to implement changes to labelling requirements and called for a "holistic approach that would promote overall health" (Health Canada Sodium Working Group, 2010). In particular, the SWG stated that the **United States** IOM Committee's review be taken into account. Meanwhile, a literature review of research related to FOP labels by the Public Health Agency of Canada is ongoing. Health Canada is also preparing an assessment of the various approaches used to establish and build consensus on nutrition criteria for "healthy foods" in cooperation with the Food Directorate and the Office of Nutrition Policy and Promotion, though it is unclear at this stage how such criteria will be linked to nutrition labels.

## ASIA-PACIFIC

In **Australia** and **New Zealand**, FSANZ is considering FOP labelling. A March 2009 FSANZ stakeholder consultation on FOP labelling revealed divergent views. Policy options under consideration are:

- the status quo (i.e. no policy guidance),
- the provision of guidance only on the scope, aim and matters to be taken into account,
- the provision of guidance that FOP labels should be non-interpretive (e.g. % daily intake) or
- the provision of guidance that FOP labels should be colour-coded (Australian Food Grocery Council and New Zealand Nutrition Foundation, 2009).

At the request of the Council of Australian Governments and the Australia and New Zealand Food Regulation Ministerial Council, representing Australian and New Zealand Governments, a review of food labelling policy was published in January 2011. Entitled *Labelling Logic: Review of Food Labelling Law and Policy*, the review recommends that voluntary multiple traffic lights FOP labelling system should be introduced, and that such labelling should be mandatory if health claims are made or equivalent endorsements, trade names or marks appear on the label (Blewett et al., 2011).

Following the report's release, the government of **New South Wales** called for the introduction of a multiple traffic light front-of-pack labelling system across all food packaging. (EU Food Law, 2011). School canteens in New South Wales already use a traffic-light labelling system and red-light foods can only be sold twice a term (Sky News, 2011).

In **China**, the Ministry of Health (MOH) is developing a nutrient profiling model in cooperation with the Chinese Nutrition Society. Although the use of the model has not yet been decided, one of the options that is being discussed is a FOP logo as part of a broader consumer education strategy.

## AFRICA

Regulators in **South Africa** have heightened their interest in the global FOP labelling debate, but there is currently no legislation proposed.

## 4. Extending nutrition labelling beyond packaged foods

Out-of-home eating has been on the increase in many countries for some years, which is why some legislators and health campaigners have advocated extending nutrition labelling to restaurants and other food outlets, including in-flight meals (Just Food, 2009).

### NORTH AMERICA

Following a proliferation of different state and local laws in the **United States** which required eating out establishments with 20 or more stores to post nutrition information on menus and menu boards and consumer group pressure (CSPI, 2010), federal health care legislation was passed, which includes a national, unified menu labelling policy. The policy requires calorie labelling to be posted on menus, menu boards, drive-through displays and vending machines for chains with 20 or more outlets. Additional nutrition information must be provided on request. Custom orders, temporary specials and items not listed on the menu board (e.g. condiments) are exempt from the calorie labelling requirements. The legislation will supersede the varied state and local requirements (see Annex VI).

In April 2011, the US Food and Drug Administration (FDA) issued two proposed regulations regarding calorie labelling on menus and menu boards in chain restaurants, retail food establishments, and vending machines. Specifically, consumers would see calories listed in restaurants and similar retail food establishments that are part of a chain with 20 or more locations doing business under the same name and offering for sale substantially the same menu items. Operators who own or operate 20 or more vending machines would post calorie information for food sold in a vending machine, unless certain nutrition information is already visible on individual packages of food inside the machine. The agency is also proposing that the following statement on daily caloric intake be on menus and menu boards to help consumers understand the significance of the calorie information in the context of a total daily diet: "A 2,000 calorie diet is used as the basis for general nutrition advice; however, individual calorie needs may vary." The FDA invites input on the proposed regulations by visiting <http://www.regulations.gov> (US FDA, 2011).

A similar trend is occurring in **Canada**, where the Health Canada Sodium Working Group called on the food service industry to develop a way to provide nutrition information in July 2010. This follows a 2009 private member's bill being tabled in the province of Ontario to require food service premises with a turnover greater than CAN\$5 million to provide nutrition information on menus (Ontario's National Democratic Party, 2009). Health Canada hosted a think tank on the Provision of Nutrition Information in Restaurants and Food Services on 28 March 2011 and concluded that current evidence on the effect of menu board labelling is not conclusive and that further studies are required.

In **Mexico**, the Federal District of Mexico (Mexico City) introduced rules in section VIII of article 76 of the Health Law of the Federal District that requires all markets and businesses which sell food products in the city of Mexico, such as markets and restaurants, to provide nutrition information supported by traffic light colour-coding. Operators will have six months to roll out the scheme (Mora, 2011).

### EUROPE

The menu labelling trend has also been picked up in the **UK**. The UK FSA and 18 catering companies launched in April 2009 a pilot project to test the voluntary provision of calorie information on food menus, and a further 3 companies joined (UK Food Standards Agency,

2004/2005). Calorie information was initially displayed in 450 food outlets and independent research was carried out to assess consumer understanding and use of the system (see section 6.5). Further to the pilots, Health Secretary Andrew Lansley announced in March 2011 that 28 companies have pledged to provide calorie labelling on menus starting September 2011 as part of the Government's Responsibility Deals with businesses and other organisations to improve public health. The signatories as of 15<sup>th</sup> March 2011 include: ASDA, Camden Food Co., Compass Group UK & Ireland, Co-operative Group (The), GlaxoSmithKline (GSK), Harvester Restaurants, ISS Facility Services Healthcare, KFC UKI, Kraft Foods UK and Ireland, Marks & Spencer, McCain Foods (GB) Ltd, McDonald's Restaurant Limited, Midcounties Co-operative, Morrisons Supermarkets Plc, Nestle UK, Pizza Hut (UK) Limited, Pret A Manger, Sainsbury's Supermarket Ltd, 7 Day Catering Ltd, Sodexo, Tesco PLC, The Real Greek Food Co Ltd, Unilever UK Ltd, United Biscuits (UK) Limited, Waitrose, Warburtons Limited, Wimpy Restaurants Group Ltd. and YO! Sushi.

In **Sweden**, menu labelling with the Keyhole has been in place since 1992. The organisation "Keyhole in restaurants" offers guides, certification and monitoring for restaurants that train the staff in healthy cooking and offer an optional meal in accordance with the guidelines of the Keyhole symbol (Codex, 2010a). Approximately 300 restaurants are Keyhole-certified as of May 2010. Keyhole certification schemes for outdoor dining in Denmark and Norway based on the Keyhole in restaurants model is being developed (Norden, 2010).

## MIDDLE EAST

**Israel** announced in June 2007 that it would consider requiring all restaurants to list calorie contents next to their menu items (Diamond, 2007).

## ASIA-PACIFIC

Mandatory menu labelling has been put in place in **South Korea, Taiwan** and in the **Australian state** of New South Wales. **Malaysia** has adopted self-regulatory guidelines.

In **South Korea**, nutrition labelling in restaurants became mandatory in 2010 following a 2008 pilot project, which encouraged bakeries, fast food restaurants and fried chicken, pizza and coffee franchises to voluntarily post information about calories, carbohydrates, sugar, and fat on the product's packaging or on their website (Sue-young, 2008). Additionally, a Presidential Decree states that any business, including restaurants and bakeries with more than 100 stores, that prepares and sells "children's preferred foods" shall label the nutritional values of foods (Korean Food and Drug Administration, 2008).

In **Taiwan**, eight fast food chains took part in a campaign which ran from July to December 2010 by the Taipei County Government. As of 1 January 2011, fast food chain outlets are required to clearly indicate the calories, protein, fat, sodium and carbohydrate on packaging for items including meat, vegetables, milk, eggs, beans and fish. A fine will be imposed by the government if any of the companies fails to introduce the labels island-wide after that date (China Post, 2010).

**Malaysia's** Health Ministry launched a set of self-regulatory guidelines in December 2007 which make nutrition labelling compulsory for fast-food operators, defined as "foods that are prepared in large quantities, following standardised procedures and served rapidly in restaurants commonly known as fast food restaurants, which usually advertise their services through the electronic and print media" (Asian Food Information Centre, 2007a). The guidelines took effect starting January 2008 on a self-regulatory basis. The guidelines encourage "fast-food" outlets to display nutrition information on the wrappers, brochures, pamphlets or posters of fast foods. The guidelines call for Recommended Nutrient Intake (RNI) to be displayed for energy, fat, protein and carbohydrates. The amount of sugar per



serving should also be provided for beverages as should the amount of salt per serving for fried chicken, burgers and French fries.

The **Australian** federal government and the Quick Service Restaurant Industry undertook roundtable discussions in September 2007 on reducing trans fat in foods without replacing them with saturated fat ("Fast food industry to lower fat content," 2007). Some restaurants have voluntarily included nutrition information on product packaging, in stores and on websites to raise awareness about trans fats (Australia New Zealand Food Standards, 2009).

Meanwhile, some Australian states have made or are trying to make the display of nutrition information on menus obligatory at state level. As of 1 February 2011, food outlets in New South Wales (NSW) with 20 or more locations in NSW or 50 or more locations in Australia are required to display on menus and menu boards the energy content expressed in kJ and the statement, "the average adult daily energy intake is 8,700 kJ". Businesses have until 1 February 2012 to comply before penalties come into force. The scope includes traditional fast food chains as well as coffee, bakery, snack food, juice bar and ice-cream chains (NSW Food Authority, 2011).

Queensland, Victoria and South Australia are considering mandatory menu labelling. A South Australian proposal will require chains with more than 20 outlets in the South Australia region or with over 50 outlets in the whole country to display energy information clearly and legibly on menus, websites and leaflets. It is expected that the regulations will be implemented in January 2012 (EU Food Law Weekly, 2011). The previous Victorian government declared in 2010 that it would compel chains with 50 or more stores to provide kilojoules on menus, but the newly elected government is considering whether to proceed with the law. Queensland would like a national approach to menu labelling, and placed it on the agenda of the October 2010 Ministerial Council meeting (Hall, 2010).

## PRIVATE INITIATIVES

The previous section presented three main nutrition labelling schemes that countries encourage the operators to adopt voluntarily (judgement of nutritional value, health logo, and proportion of daily consumption). This section describes what operators are using in practice. Many operators and NGOs have developed their own nutrition criteria for nutrition labelling, but look to international and national nutrition labelling guidelines as a framework.

### 1. Manufacturers and retailers front-of-pack initiatives

#### 1.1 Judgement of nutritional quality

Some **UK** retailers have adopted FOP traffic light labels for own-label products using the UK FSA's criteria for the traffic light scheme. Sainsbury's offers a "Wheel of Health", featuring calories, fat, saturated fat, salt, and added sugars shaded in red, amber and green. Waitrose displays green, yellow and red dots with the words "high", "med" and "low" for the same nutrients as a FOP label. Some retailers, like Sainsbury's, combine the FOP traffic lights label with a GDA BOP label. Asda and Marks and Spencer's use FOP colour-coded GDAs.

The Mousquetaires group, which includes Intermarché and Ecomarché, has also launched a traffic light label based on GDAs called the "Nutri-pass" for use on the FOP or BOP in **France, Belgium, Poland, Spain, Lithuania** and **Portugal**. Unlike the UK FSA's traffic light labels,

Figure 2. The Healthy Eating System



Health Eating System

Image Credit: Sanitarium Health and Wellbeing, 2011

the Nutri-pass features green, yellow and orange, rather than green, yellow and red. Similar to the UK FSA's traffic light labels, the Nutri-pass appears only on certain private label products (e.g. ready meals, biscuits). The Nutri-pass provides traffic light GDAs either for children (based on 1600 kcal) or adults (reference for women 2000 kcal). The Nutri-pass was rolled out in 2008 and appears on approximately 600 products in France, on 60 products in Spain, on mayonnaise and sauces in Belgium and on about 100 products in Poland and Portugal.

In **Australia**, food manufacturer Sanitarium Health and Wellbeing has developed a Healthy Eating System, based on the UK FSA's traffic light scheme as a response to the recommendations of the Review of Food Labelling Law and Policy. The Healthy Eating System incorporates the key nutrients from the UK's scheme (total fat, saturated fat, sodium, total and added sugar) per 100g/ml, and also shows "positive nutrients" (protein, fibre, fruits, vegetables, nuts and legumes and wholegrain). Traffic light colours are used to show if the quantity of each nutrient is high, medium or low. In addition, the system displays recommendations: "Eat Often", "Eat Occasionally" or "Eat Sparingly" and a traffic light colour corresponding with this overall judgement. Sanitarium has retained no intellectual property rights on the Health Eating System to make it freely available (Sanitarium Health & Wellbeing, April 2011). Sanitarium's proposed food labelling system is intended as an additional concept to be considered in the food labelling policy review. The media release does not state if and when Sanitarium will roll out such labels on its products.

## 1.2 Percent of daily consumption

A growing number of multinational manufacturers (e.g. Coca-Cola, Kellogg, Kraft, Mars, Nestlé, Tesco, Unilever) and retailers (e.g. Carrefour, Tesco, Delhaize) are voluntarily applying a FOP GDA scheme **globally**. In **Europe**, the Confederation of Food and Drinks Industries (CIAA) took the lead in 2006 in developing a common GDA labelling scheme and encouraging companies to apply it on a voluntary basis. A total of 1,030 brands were expected to be using this voluntary scheme by the end of 2008. A majority (65%) of large companies and a number of medium (58%) and small (34%) enterprises have or are planning to introduce GDA labelling. In the UK, as of June 2010, five retailers, three

## The Confederation of the Food and Drink Industries of Europe's (CIAA) GDA values

CIAA recommends that GDA values shown on a food or drink label should be those for an average "adult," which are established for "women" as:

Energy	2000 kcal
Protein	50 g
Carbohydrates	270 g
Sugars	90 g
Fat	70 g
Saturated Fat	20 g
Fibre	25 g
Sodium (salt)	2.4 g (6 g)



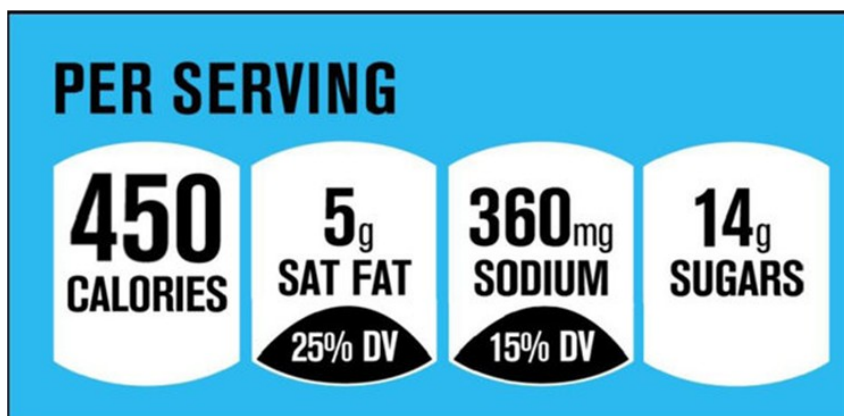
foodservice, two convenience store chains and 83 manufacturing companies are using the GDA icon labels on the FOP of over 20,000 product lines. This amounts to 50% of all UK retail food and drink packs (Food and Drink Federation, 2010). In **France**, Groupe Casino, which was previously using a colour-coded scheme, now uses GDAs.

Under the CIAA's GDA scheme, operators provide information for energy plus seven nutrients (protein, carbohydrates, sugars, fat, saturates, fibre, and sodium) on a BOP label and four of these (energy, total fat, sugar and salt) as percentages of GDAs on the FOP or BOP. Operators present this information on a per 100g/ml basis and may also provide information per serving or per portion. The operator may determine the serving or portion size, which "should reflect the amount of the product that can reasonably be expected to be consumed on an eating or drinking occasion." Operators may also choose to display calories as a percentage of GDA on a FOP label. The CIAA scheme gives operators choices in

how to display calories (e.g. they may choose between using the word "Calories", "Energy", and "kcal"). Operators may also choose to display GDAs for sugars, fat, saturates and sodium on FOP labels.

Some operators are rolling out this scheme worldwide. In **Mexico**, seventeen Mexican and international companies including Grupo Bimbo, Kellogg's, Unilever and the dairy firm Alpura will launch a new FOP labelling scheme for processed foods and non-alcoholic drinks based on GDAs which will be called "check and choose". It is expected that by 2013 that the scheme will be expanded to 300 products. (Just Food, 2011). Similarly, a group of food companies in **Thailand** and **India** display voluntary FOP GDAs on all leading brands.

A similar initiative is underway in the **United States**. The Grocery Manufacturers Association (GMA) and the Food Marketing Institute (FMI), representing United States' leading food and beverage manufacturers and retailers respectively, joined forces and unveiled a new FOP nutrition labelling system called Nutrition Keys in January 2011. This system adds fact-based nutrition information on calories per portion on the FOP, as well as saturated fat, sodium and sugars in grams per portion and as a percentage of daily value, with the exception of sugar. Up to two nutrients from a list of eight nutrients that are under-consumed in the diets of most Americans may be



Nutrition Keys

Image Credit: Grocery Manufacturers Association and Food Marketing Institute

**Table 1: Food Standards Agency of Australia New Zealand (FSANZ) Food Standards Code, Reference Values for Daily Intakes**

Food Component	Reference Value for Daily Intakes
Energy	8700 kJ
Protein	50 g
Fat	70 g
Saturated fatty acids	24 g
Carbohydrate	310 g
Sodium	2300 mg
Sugars	90 g
Dietary fibre	30 g

displayed in addition in grams and as a percentage of daily value.

In **Australia** and **New Zealand**, the Australian Food and Grocery Council (AFGC) revised its Daily Intake (DI) Industry Guide on the use of FOP percent DI labelling in 2009. Daily Intake Guide Labelling was voluntarily introduced by industry in Australia and New Zealand in 2006. FSANZ's Food Standards Code determines the Reference Values for daily intakes, which are based on the average adult diet (see table 1).

To date, the Daily Intake Guide appears on a number of branded food products. Daily intake labelling is also supported by retailers, industry bodies and fast food outlets. AFGC's fourth audit report on Daily Intake Guide Labelling shows that over 177 companies and/or brands covering more than 2,000 products use daily intake labelling in Australia.

### 1.3 Calorie/energy labels

Other initiatives involve displaying the total amount of calories without the GDA on the FOP. The **Dutch** Federation for the Food Industry has had such a label in place since 2006 and the **Finnish** Federation of the Brewing and Soft Drinks Industry is introducing calorie information on all beer and cider packaging by the end of 2010 (STT, 2008). More recently, non-alcoholic beverage companies in the **United States** announced in February 2010 that they will voluntarily provide calorie information on the FOP, vending machines and fountain machines (American Beverage Association, 2010). The companies are coordinating with the FDA to implement the initiative, called "Clear on Calories," which goes beyond federal food labeling regulations. The industry started implementing the initiative across the country in 2010, with a view to completion in 2012. In addition, the newly announced GMA/FMI Nutrition Keys labeling initiative will complement the American Beverage Association initiative (GMA, 2011).

### 1.4 Health logo

Manufacturers and retailers sometimes use FOP health logos that are based on nutrition criteria that determine whether a food or beverage qualifies for a "better choice" status within a food category. In other words, these logos summarize nutrition information and quickly identify "better-for-you" choices among products.

**Smart Choices Program:** In the **United States**, the Keystone Center Food and Nutrition Roundtable facilitated the development of a voluntary "Smart Choices Program™", which included a logo for food products that meet certain nutritional standards. Roundtable members included food producers and distributors, consumer and health advocates, nutrition and public health experts and federal agency observers. The logo showed a check mark along with the amount of calories per serving and the number of servings in the package.

Unlike the health logos that companies used before, the "Smart Choices Program™" was based on uniform nutritional standards. It set maximum standards for "nutrients to limit",



such as total fat, saturated fat, cholesterol, added sugars and sodium (see Table 2). Products in most categories also had to provide nutrients (e.g. calcium, potassium, fibre, magnesium, vitamin A, vitamin C and vitamin E) or food groups (fruits and vegetables, whole grains and low fat or fat free dairy products). The intention was to replace participating companies' previously-used health logos, such as PepsiCo's "Smart Spot" logo or Kraft Foods' "Sensible Solutions" banner in the United States once the "Smart Choices Program"™ was developed.



Image Credit: Smart Choices Program

Following FDA Commissioner Margaret Hamburg's declaration on 20 October 2009 that the agency intends to develop standardised criteria on which future FOP or shelf labelling will be based, the Smart Choices Program™ announced that it will voluntarily postpone active operations and not encourage wider use of the logo at this time by either new or currently enrolled companies (Smart Choices Program, 2009).

**Choices International Foundation:** The Choices International Foundation, an initiative of Unilever, Campina, and Friesland Foods, is another significant private sector nutrition labelling programme. The "Choices" logo is a FOP logo for food products that meet the Choices International Foundation's qualifying criteria (see Table 3). The criteria follow WHO dietary recommendations and are to be reviewed every two years following the first review in 2008, which was made public in October 2009 (Choices International Foundation, 2009). The review updated and strengthened existing criteria to reflect the latest developments in nutritional science. An independent auditing company checks the food products' composition and labelling information on the market. A science-led programme evaluates the scheme's effects on consumer awareness, purchasing behaviour, sales, product reformulation, and innovation by industry and the impact on diet and health. One such study shows that the Choices Programme contributes to the development of healthier food products as food manufacturers in the Dutch Choices Programme have either developed new products or reformulated old ones to meet the product criteria (Choices Programme, 2010).



Image Credit: Choices International Foundation

The Choices International Foundation operates at the national level with the objective of implementing a uniform industry-wide logo with the endorsement of local authorities, non-governmental organisations and civil society. The Choices logo has been adopted by 130 companies and appears on over 4,500 products. The logo is present in around 50 countries

**Table 2: Choices Foundation Nutrient Criteria**

Nutrient	WHO dietary recommendations	Generic criteria for product
<b>Saturated fat</b>	10%	13%
<b>Trans fat</b>	1%	1.3%
<b>Sodium</b>	1.2 mg/kcal*	1.6 mg/kcal
<b>Added sugar</b>	10%	13%
<b>Dietary fibre</b>	1.3 g/100 kcal**	1.3 g/100 kcal
* based on 2,4 g/day, calculated from the energy recommendation for women = 2000 kcal/d		
** based on 25 g/day, calculated from the energy recommendation for women = 2000 kcal/d		



and is being expanded to more countries.

**Company-specific health logos:** A number of retailers and manufacturers display health logos on the FOP. For example, **UK** Retailer Sainsbury's adds a FOP "Be Good to Yourself" label to private label products that meet certain criteria, along with its traffic light-based Wheel of Health. Other UK retailers have similar logos on own-brand products, such as Tesco ('Light Choices' and 'Healthy Living' ranges) and ASDA ('Good for You' range). In the **United States**, Wal-mart announced in January 2011 that it will introduce a FOP health logo that will be supported by a nutrition standard designed to increase vitamins, minerals, whole grains, fruits and vegetables, while limiting saturated fats, sodium and added sugars (Wal-mart, 2011). Some **Canadian** manufacturers place a FOP logo on packaged foods that meet certain criteria (e.g. contains no hydrogenated oils), in addition to the mandatory Nutrition Facts Panel.

**Heart foundations:** Heart foundations around the world (**Netherlands, Slovenia, Canada, Finland, United States, Australia, New Zealand, Thailand, South Africa, Malaysia**) offer their symbol to be placed on food products that meet their criteria (e.g. < 3g total fat, < 1g saturated fat). These foundations generally charge a licensing fee to operators for the use of their logo. Heart foundation symbols generally fall under nutrition and health claim rather than nutrition labelling legislation in many regions (**United States, EU**). The American Heart Foundation announced in February 2010 that it will no longer allow its logo to be used on desserts (Scott-Thomas, 2010). Heart foundation symbols also extend beyond packaged food in some countries (**Slovenia, Australia, Canada**).

## 1.5 Other schemes

Some operators have developed alternative labels to the ones mentioned above:

**Glycaemic impact:** The **New Zealand** Nutrition Foundation owns the "eMark," and has developed this in partnership with the New Zealand Crop and Food Research's *Lifestyle Foods for Energy Balance* research programme. The eMark is a food classification and labelling system, providing information on the amount of energy in foods (energy density, denoted by the number on the logo) and the rate at which this is available for use by the body (relative glycaemic impact, denoted by the colour of the logo). The recommended serving size on the Nutrition Information Panel of foods registered for an eMark is required to conform to the eMark website guides to healthy eating. The eMark is based on Ministry of Health Food and Nutrition Guidelines and Nutrient Reference Values for Australia and New Zealand.

The associated website, [www.emark.co.nz](http://www.emark.co.nz), includes a database of foods and their eMarks and provides information on how a food fits into a daily eating plan. Consumers can choose a meal plan based on their age, gender and activity level.



Image Credit: New Zealand Nutrition Foundation

**Food groups, not nutrients:** Some labelling schemes put the emphasis on food groups rather than nutrients. In the **United States**, the labelling system of ConAgra Foods' "Start Making Choices™: Your Plan for a Balanced Life" Program uses colour-coded graphics to show how each product contributes to the USDA-defined key food groups in MyPyramid. Also with a focus on food groups, some NGOs in the **United States** offer logos targeting specific dietary

needs (e.g. dairy, whole wheat) and promoting fruits and vegetables. The U.S. National Dairy Council adds a "3-a-day" logo to cheese and other dairy products. The U.S. Whole Grain Council offers a whole grain stamp for whole grain products, which displays the number of grams of whole grain ingredients per serving size and appears on products offering at least a half serving (8 g) of whole grains. If a product contains the 100% Stamp, then all its grain ingredients are whole grains. The U.S. Produce for Better Health Foundation offers a More Matters™ logo on all forms of fruits and vegetables (fresh, canned, etc.) as well as recipes, meal products, and main dish products that meet



Image credit: ConAgra Foods

Centers for Disease Control and Prevention nutrition criteria based on the *Dietary Guidelines for Americans*, the U.S. Food and Drug Administration's labelling definitions, and U.S. Department of Agriculture's Food Guide serving sizes.

**Point-of-sale information, not labels:** Supermarkets in the **United States** are adding nutrition information to shelves rather than food packages:

- ONQI ("overall nutrition quality index") is a nutritional profiling system developed by Dr. David Katz, Director of the Yale Griffin Prevention Research Center at Yale University. It uses an algorithm to determine a food's "nutrition quality score". NuVal™ licenses a proprietary food scoring system based on the ONQI to food retailers. U.S. food retailers that use the NuVal system include Topco Associates, Hy-Vee supermarket, Price Chopper and Meijer. Topco Associates plans to score over 50,000 food items. The NuVal Nutritional Scoring System has been officially endorsed by the American College of Preventive Medicine (Smith, 2010).
- Ahold USA introduced in 2008 a "Healthy Ideas" logo on shelves in Stop & Shop and Giant Landover stores to point out healthy foods, and Giant- Carlisle rolled out the "Healthy Ideas" shelf-tags in 2009.
- In 2009, Supervalu began affixing colour-coded "nutrition iQ" labels on shelves to mark products that meet selected nutritional criteria for 11 nutrient claims (e.g. products high in fibre would receive an orange tag while products low in saturated fat would receive a red tag). Supervalu announced in January 2011 that it was expanding the "nutrition iQ" label to its fresh food departments. The label will also contain additional nutrient attributes including minerals and vitamins A, B, C and K. Spartan stores in Michigan announced in September 2009 that they would launch a similar colour-coded scheme for 6 health claims based on FDA guidelines.
- Food Lion and Hannaford Supermarket use a "Guiding Stars" credit/debit rating system. The program uses a proprietary formula to rate all foods based on nutrient content per 100 calories and assign zero, one, two or three stars. Foods with more stars have more nutrients than foods with fewer stars. The ratings for the Guiding Stars system were drawn from labelling standards and nutrient levels set by U.S. federal agencies and the WHO.
- In 2010, Whole Foods launched a programme called ANDI,



Image Credit: Nutrition iQ

which stands for Aggregate Nutrient Density Index. The ANDI formula is based on nutrients per calorie. Thus, the highest scoring foods have the fewest calories and virtually no fat. Whole Foods posts the ANDI result on nutritional scorecards around their shops to help consumers choose foods with the most nutrients per calorie.

- Safeway introduced "Simple Nutrition" shelf tags in February 2011. The teal-bordered tags have colour-coded labels for 22 nutrition and ingredient benefits including gluten free, organic, whole grain and fat free to cover both dietary or lifestyle needs, and specific nutrition or ingredient concerns.

## 2. Restaurants/caterers

**Some restaurant chains voluntarily provide nutrition information at the point of purchase.**

In the **United States**, some major restaurant chains (including Burger King Holdings Inc., McDonald's, Starbucks and Yum Brands Inc.) voluntarily provided nutrition information in-store (on brochures, menus, tray liners or packaging) before it became mandatory in March 2010. Many of these approaches will likely be changed or be adjusted in light of the proposed rules.

Elsewhere, in-store restaurant-led initiatives are continuing worldwide. In **Canada, Asia, Europe, Latin America** and the **United States**, McDonald's has provided its GDA Nutrition Chart on all permanent food packages and nutrition information on packages, tray-liners, posters, and online since the end of 2006. McDonald's Nutrition Chart depicts calories, protein, fat, carbohydrates and sodium in grams per portion and as a %DV. In **Australia**, McDonald's has introduced Daily Intake Guide Labelling. Other restaurants which provide nutrition information in stores include BP Connect's Wild Bean Café in the **UK** and Denny's restaurant in **Japan**, which shows energy value and sodium content on the menu and the nutritional contents of each dish on its website.

Nutrition information for restaurant meals can also be found online in the **United States**. The National Restaurant Association and Healthy Dining launched The Healthy Dining Finder, which helps consumers identify nutritious choices on restaurant menus. Healthy Dining developed criteria for restaurant meals to be considered a nutritious choice (e.g. entrées must be 750 calories or less). Restaurants may choose to participate. Another organisation, Nutrition Systems, provides nutrition information for 70 of the leading U.S. fast-food, casual dining, and family dining restaurants on NutritionPedia.com, regardless of whether operators choose to participate. NutritionPedia.com relies on nutrition data provided by restaurant websites and printed materials, as well as user input.

In **Canada**, the restaurant and food service sector is currently identifying the research gaps to better inform themselves on how to move forward with menu labelling.

# EDUCATIONAL PROGRAMMES

Awareness-raising and consumer education are important elements in ensuring that consumers read, understand and use nutrition labels to inform their product choices.

## 1. Governments

Most countries that have mandatory nutrition labels on packaged food have educational programmes on how to read, use and understand nutrition labels (e.g. **Australia, Canada, Hong Kong, New Zealand, Philippines, South Africa, U.S.**). Some of these government campaigns are highlighted below:

- The **UK** FSA spent £2m on a series of animated TV-ads in 2007 to raise awareness of the new traffic light labels, which aired on ITV, satellite channels, and in Welsh. Ads were also placed in women's magazines and in the UK national press. In October 2009, the FSA launched a free program for web-enabled phones that allows users to check whether the salt content of a food product is high, medium or low.
- The **United States** FDA and Cartoon Network launched the Spot-the-Block campaign in June 2007, which features cartoon characters to help children learn to read nutrition labels. The campaign went online and on-air in April 2008 and is designed to target children between the ages of nine and 13 and families. The Center for Food Safety and Applied Nutrition (CFSAN) of the U.S. FDA sponsors Make Your Calories Count, an interactive learning program that provides adult consumers with information on using the Nutrition Facts Panel. In September 2009, the USDA Center for Nutrition Policy and Promotion (CNPP) launched MyFood-a-pedia, a new online tool that gives consumers quick access to nutrition information for over 1,000 foods. The MyFood-a-pedia provides calorie count information on the contribution of the food to the five food groups people need to be healthy. MyFood-a-pedia, located at [www.MyFoodapedia.gov](http://www.MyFoodapedia.gov), also provides the number of "extra" calories in foods from solid fats, added sugars, and alcohol. With the release of the new 2010 Dietary Guidelines for Americans, CNPP will feature a number of health professional resources and educational tools that will provide nutrition information to improve diet quality (USDA, 2011).
- Health **Canada** and Food Consumer Products of Canada launched a campaign in October 2010 targeted at consumers to improve their understanding of the Nutrition Facts table (available at <http://www.hc-sc.gc.ca/fn-an/label-etiquet/nutrition/cons/dv-vq/index-eng.php>). As part of this campaign, the "nutrition labelling toolkit", which was developed for inspectors, manufacturers, importers and distributors of the Canadian Food Inspection Agency, consultants and educators, has been updated. Health Canada will be running a series of public service announcements on television on the importance of reading food labels, while its website offers an interactive Nutrition Facts Panel, a quiz and more. This is accompanied by a social marketing

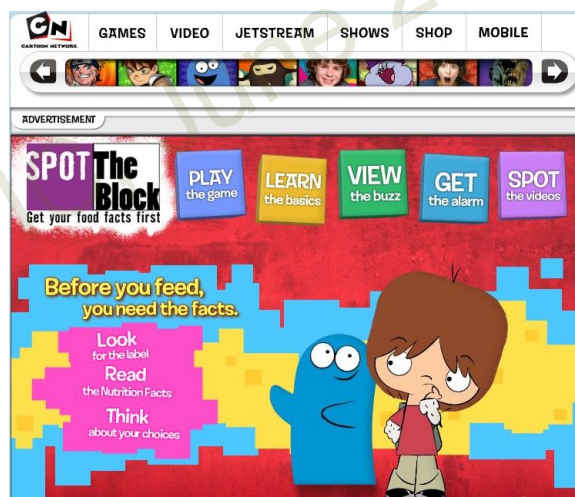


Image credit: Cartoon Network



campaign to promote healthy eating, targeting parents of children aged 2 to 12 years old. Phase 1 of the campaign will focus on attempting to reduce the population's average intake of sodium from sodium from 3400 mg to 2300 mg in the context of healthy eating, whilst Phase 2 will concentrate on healthy weights.

- **Japan's** Ministry of Agriculture, Forestry and Fisheries published a "Food Balance Guide" in June 2005 to inform consumers about "how much" of "what" they should eat with an aim to helping consumers interpret nutrition labels (Japanese Food Information Council, 2009).
- Similarly, **Malaysia** will officially launch dietary guidelines in early 2010 with the key message, "Make effective use of nutrition information on food labels". An educational campaign has been underway in **Hong Kong** since 2008 on how to read and understand nutrition labels and was disseminated using various forms of media (TV, radio, public announcements, etc.).

## 2. Private sector and NGOs

Industry has also played a role in educating consumers about healthy living and following nutrition guidelines. Many food manufacturers and retailers provide information on their websites about how to read and use nutrition labels (see "Private Companies" under Appendix III for links). The awareness-raising and education effort has increased as the food industry has adopted and promoted GDA-based systems on a voluntary, proactive basis.

### 2.1 Educational advertising campaigns

- In **Australia**, the Australia Food and Grocery Council (AFGC) has conducted a consumer education campaign for Daily Intake Guide Labelling. This included public service announcements on television, press ads in consumer magazines, research, media activity and a website. AFGC is now focusing on consumer education at point-of-sale in partnership with retailers.
- **Canada's** Heart and Stroke Foundation offers television, radio and print public service announcements for Heart Month (February) and for general use to raise awareness of the Foundation's activities.
- The **UK's** Food and Drink Federation (FDF) sponsored an 18-month advertising campaign beginning in January 2007 that encouraged consumers to make better-

#### Start Exploring

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Interactive Tools
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#### Nutrition Facts Table

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#### How to Choose

Use this interactive tool to learn how the Nutrition Facts table can help you **choose** healthier food products.

[HTML Version](#) | [Flash Version](#)



#### How to Compare

Use this interactive tool to learn how the Nutrition Facts table can help you **compare** food products and make a better choice for you.

[HTML Version](#) | [Flash Version](#)



#### Amount of Food

Use this interactive tool to see how the amount of food you eat changes the quantity of calories and nutrients you get from a food.

[HTML Version](#) | [Flash Version](#)

Image credit: Health Canada



informed choices about what they consume, entitled "The What's Inside Guide: Know what's going on inside you". The campaign explained how to use GDAs to assess key nutrient intake to maintain a balanced diet. The FDF's website also offers a nutrition calculator and advice from nutritionists.

- The Choices International Foundation makes video ads available on its website to educate consumers on use of the Choices stamp and to explain that the Choices stamp is based on international dietary guidelines (Choices International Foundation, 2009a).
- The Consumer Goods Council of **South Africa**, in consultation with the Department of Health, has begun work on an annual Nutrition Education Communication Initiative which shall include general health messages based on the South African Food Based Dietary Guidelines and labelling education.
- In the **United States**, the Grocery Manufacturers of America and Food Marketing Institute plan to support their Nutrition Keys FOP nutrition labelling initiative with a \$50 million consumer education campaign beginning in 2011, which will be aimed at parents who are the primary household shoppers.

## 2.2 Retailers' educational programmes

Some retailers are taking on the role of educators, either through partnership with nutritionists or through employee training.

In **France**, retailer Intermarché (ITM) launched the "Défi Mousquetaires" (Musketeer Challenge) healthy eating program in partnership with the nutritional association, Défi Santé Nutrition. The programme consists of nutrition workshops at primary schools. Meanwhile, **German** retailer Edeka takes a different approach. Edeka announced in May 2008 that it would train 1,100 food service employees to provide customers with advice on health and nutrition (Edeka, 2008).

## 2.3 New media outreach

With their scope for interaction and ability to provide detailed information, websites are widely used to educate consumers about nutrition labels:

- The **New Zealand** Nutrition Foundation, in conjunction with Crop & Food Research Ltd and Lifestyle Foods for Energy Balance, launched in March 2009 a new website based on their FOP label, the "eMark."
- A Nutrition Information Education Programme in **South Korea** includes internet-based nutrition education programmes targeting nutritionally at-risk groups. It will also include nutrition-based classes in elementary schools, the development of educational materials for local health centres and events in public settings to enhance public awareness of healthy eating habits and nutrition labelling (Asian Food Information Centre, 2009).
- The **French** consumers' association CLCV launched a website in May 2008 that teaches consumers how to read nutrition labels.
- **South African** company Tiger Brands launched a multi-media campaign that explains GDAs and the "better for you" symbol which appears on products that meet specific nutritional criteria.

As smart phones are becoming more widely used, a number of smart phone applications offer consumers nutrition information as they shop or eat out:

- In the **United States**, Supervalu has developed a "nutrition iQ" iPhone app that allows consumers to evaluate the nutritional composition of their grocery list as they shop.
- Another **United States**-based iPhone app called Fooducate was developed by dietitians and "concerned parents". The app reads barcodes, provides nutrition information and identifies healthier alternatives. The nutrient criteria on which this ranking is based is unknown. It would be useful to monitor uptake and use rates of such applications, as well as their overall effectiveness in helping consumers make nutritionally balanced choices.

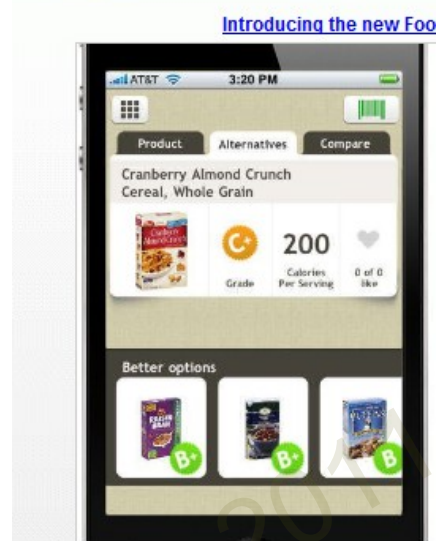


Image credit: Fooducate

## THE DEBATE

The prevailing view in countries with mandatory and voluntary labelling alike is that standardised labels are preferable to a multitude of different nutrition labels. There remains broad disagreement, however, on what format is most effective at influencing consumer behaviour.

Key developments in the nutrition labelling debate are as follows:

### EUROPE

- There is broad support in the **EU** for mandatory nutrition labelling on the BOP with a GDA approach. The debate focuses on whether FOP labels should be mandatory or voluntary and whether EU member states should be allowed to endorse additional forms of expression of the nutrition declaration. The European debate touched on issues being debated in Codex, such as whether to list "salt" or "sodium" and "total" or "added" sugar. Other aspects of the debate have focused on whether the portion sizes underpinning nutrition information should be based on what is actually consumed or the portions that should be consumed, as well as legibility requirements.
- The European Heart Network, European consumer group BEUC and European Public Health Alliance issued a joint call in April 2010 for mandatory FOP traffic lights and BOP labelling. Echoing the UK FSA's March 2010 recommendations, they state that if GDAs are used, they should be combined with traffic lights.
- A consortium of health, industry and consumer groups in **Denmark** launched a Stop-GDA campaign in 2009, which calls for GDAs to be removed from the EU's proposal for a Regulation on food information to consumers.
- **Germany's** Ministry for Food, Agriculture and Consumer Protection (BMELV) decided not to include a traffic light scheme in its updated voluntary FOP labelling guidelines after the German Society for Nutrition stated that the UK model of traffic light labelling is not scientifically grounded and that a holistic approach to nutrition is required (BMELV, 2010).
- In the **UK**, the non-profit Food Commission has an ongoing Menu Labelling Campaign. It calls for calorie information and salt information per meal item on menu boards, with font size requirements and a government-run public health campaign to educate people about calories. Meanwhile, the consumer group Which? reiterated its call for mandatory front-of-pack traffic light labelling and consistent portion sizes to facilitate comparison

(EU Food Policy, 2011).

- International Diabetes Federation (IDF) Europe supports the European Commission's proposal concerning mandatory labelling for all pre-packaged food, and recommends its introduction to non pre-packaged foods. IDF Europe also supports the usage of traffic lights so as to enable consumers to quickly understand the nutritional content. (IDF Europe, Position on Food Labelling with respect to Diabetes).

## NORTH AMERICA

- FOP labels in the **United States** are being scrutinised for being, according to critics, misleading and confusing. A survey by the American Dietetic Association in 2008 and 2009 revealed that 89.2% of its members favour a uniform nutrition symbol program and over half (58.2%) thought it should be mandatory. A CSPI report on "Food Labeling Chaos" in December 2009 calls on the FDA and USDA to take action against manufacturers using "misleading front-label nutrition symbols" and to propose mandatory nutrient criteria for the use of nutrition symbols.

The Center for Science in the Public Interest (CSPI), Dr. David Katz (developer of the ONQI nutritional guidance system) and prominent food policy commentator Professor Marion Nestle expressed unease about industry's involvement in the "Smart Choices Program™" (Nestle, 2009). In September 2009, the American Dietetic Association, American Diabetes Association and Tufts University withdrew from the Smart Choices network. After the FDA voiced concern over misleading labels, the Smart Choices Program™ announced that it would halt active operations and not encourage wider use of the logo.

In reaction to the Nutrition Keys labelling industry initiative, Professor Nestle reiterated her call for mandatory FOP labels. The White House welcomed the initiative in a statement as "a significant first step" but added that it would "look forward to future improvement" in the system. It said the FDA would closely monitor the effort "to evaluate whether the new label is meeting the needs of American consumers".

CSPI expressed strong support for the proposed menu labeling regulations released by the Food and Drug Administration in April 2011. However, CSPI also stated that they were disappointed that the proposed regulations excluded movie theaters and alcohol from the proposed menu labeling regulations and will press the FDA to include them in the final regulation (CSPI, 2011).

The current Nutrition Fact panel is considered to present a number of problems from a literacy and health literacy standpoint, because of its format, complex vocabulary, use of acronyms and the required understanding about the purpose of the information provided (e.g. calories) and math skills. For this reason, several opinion leaders feel that parents, children and minority populations should be the focus of education initiatives. The FDA is planning to conduct an experimental study to quantitatively assess consumer reactions to potential options for modifying the Nutrition Facts label format.

- In **Mexico**, consumer organisation El Poder del Consumidor called on the Minister of Health to stop the use of FOP nutrition labelling based on GDAs, criticizing in particular the use of "artificially small serving sizes".

## ASIA-PACIFIC

Countries in the **Asia-Pacific** region have been following Europe's "traffic lights versus GDA" debate closely.

- The Public Health Foundation of **India** (PHFI), a public private foundation, is exploring

the development and use of FOP nutrition labels for the Indian market. The initiative is at an early stage and is part of the PHFI's work on a nutrition and health strategy. Experience from international health logo schemes that are in use and scientific reviews on such schemes, such as those from the UK (FSA) and United States (IOM), will be taken into account by the PHFI. Stakeholders are expected to be consulted in the course of the work.

- A written comment submitted by the Korean government to the Food and Agriculture Organisation/WHO Coordinating Committee for Asia indicates that the Korean Food and Drug Administration is promoting the use of FOP traffic light labels on foods for children across Asia.
- Consumer groups in **Malaysia** and the **Thai** Health Promotion Foundation support the UK FSA's traffic light scheme.
- In **New Zealand**, the Parliamentary Health Committee indicated its support for a UK FSA-style traffic light scheme in its report, "Inquiry into Obesity and Type 2 Diabetes in New Zealand".
- Health ministers in several **Australian** states, health and consumer groups support traffic light labelling. However, the Australian Heart Foundation states that it is supportive of any initiative that "genuinely guides people to healthier food and drink choices" (Heart Foundation, 2008). Daily Intake Guide (DIG) is the system that is used by the majority of the food industry in Australia and New Zealand. The Australian Food and Grocery Council opposes traffic light labelling on the basis that it is poorly understood by consumers and has been rejected by countries around the world (Food Magazine, 2011).

## CONSUMER RESEARCH

The previous section looked at the major points and positions in the nutrition labelling debate. Most positions are justified by the assertion that consumers prefer one system over the other. This section is structured around key questions in consumer research that shed light on the effectiveness of the various nutrition labelling schemes. This Global Update presents an overview of consumer understanding of nutrition labels globally, but cautions against amalgamating the following results since different sample sizes and methodologies were used.

### 1. What has consumer research considered?

The consumer research on nutrition labelling examined in this report looks at consumer attitudes towards and understanding of nutrition labelling globally. The most relevant research identified looked at the following markets: **France, Germany, UK, Italy, Netherlands, Norway, Sweden, Poland, Hungary, Slovenia, Canada, United States, New Zealand, Australia, Argentina, Thailand, China, India and Malaysia.**

While previous consumer research has tested whether consumers prefer one particular nutrition labelling scheme over another (e.g. traffic lights versus GDAs), perception and reported use of nutrition information, more recent research focuses on the interpretation, actual use, and determinants for use of nutrition labels. EUFIC, with Professor Klaus Grunert of Aarhus School of Business, published a pan-European survey of six countries in 2008 on in-store behaviour, understanding and use of nutrition information on food labels and nutrition knowledge (EUFIC and MAPP, 2008; Grunert *et al.*, 2009).

Research in the **United States** by the IFIC Foundation and the US Institute of Medicine (IOM)

has also explored consumer preferences for format and use of the nutrition label; research includes health claims, FOP and Nutrition Facts panel (IFIC Foundation, 2004-2010; US Institute of Medicine, 2010). There have also been a number of small, short term studies on consumers' use of restaurant or menu board labelling.

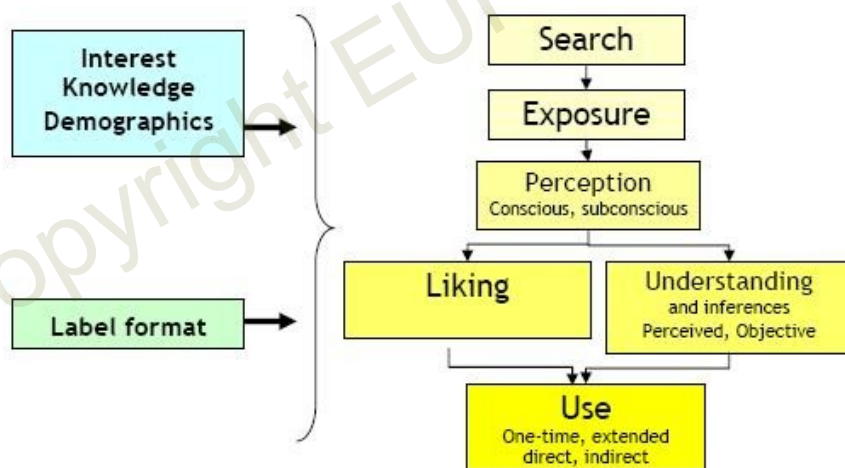
Previous research, such as the **UK** FSA's qualitative study published April 2007, looked at consumers' perception of and preferences for various FOP labelling schemes. UK consumer groups have conducted similar qualitative research (UK Food Standards Agency, 2007a; Which?, 2007).

Other research examines the contribution of educational initiatives. In **Thailand**, Mahidol University conducted a qualitative survey in 2006 in and around Bangkok on Consumers' Perception on the Nutrition Level Sign-Posting of fat, sugar, and sodium and tested consumer understanding before and after explanations were given on how to interpret the different labels (Asian Food Information Centre, 2009). In Asia, some studies explore the applicability of consumer research conducted in North America and Europe to the Asian context.

## 2. Do consumers look at nutrition labels?

The MAPP Centre for Research on Customer Relations, Aarhus School of Business, Denmark, carried out a qualitative analysis of the literature on consumer response to nutrition information on labels in Europe from 2002 onwards, for EUFIC. The analysis produced a theoretical framework, displayed below, to clarify the consumer's decision-making process regarding nutrition labels.

**Figure 3. Theoretical Framework for the Consumer's Decision-Making Process Regarding Nutrition Labels**



*Image Credit: Grunert, K. and Wills, J. (2007) "A review of European research on consumer response to nutrition information on food labels," Journal of Public Health, 15, pp. 385-399.*

**This review of the nutrition labelling literature confirms the findings of Grunert and Wills 2007 that the reported use of nutrition labels varies by country and that little is known about whether healthier purchases result from this use.**



## 2.1 Reported consumer use of labels varies widely but may not reflect actual use

The reported use of nutrition labels varies worldwide:

- In **Canada**, the reported use of nutrition labels is fairly widespread, ranging between 57% and 68% of consumers according to the Canadian Council of Food and Nutrition's (CCFN) 2008 TNT study and Ethnographic Survey 2010 (CCFN, 2008; CCFN, 2010). However, the Ethnographic Survey found that participants do not use the Nutrition Facts Table extensively but rely on nutrition claims and FOP information presented in a simpler fashion (CCFN, 2010).
- In **India**, a majority (59%) of Indians report looking for nutritional information on food packaging regularly or occasionally, representing a 49% rise over the last two years (Economic Times, 2008).
- Reported use of food labels is also growing in **Malaysia**. Nielsen found that 64% of Malaysian consumers "notice" nutrition labels on packaging, though only 27% of consumers state that they "regularly check" the labels on packaged food (AFIC, 2006). However, Malaysia's 3<sup>rd</sup> National Health and Morbidity Survey found that less than 15% of respondents read nutrition information (AFIC, 2009).
- In **Thailand**, three out of five people surveyed stated that they looked for nutrition information on a food label at least occasionally (AFIC, 2007a), while in **Hong Kong** a survey conducted by the University of Hong Kong found that the majority of people do not read food labels and that only one in eight respondents can name all the key nutrition categories required by a labelling law. Only 13% of those surveyed stated that they would read nutrition labels every time they purchased pre-packaged food products, while 18% said that they never read nutrition labels. Of those respondents who said that they never or rarely read food labels, 44% stated that they felt that there was no need to do so as they had consumed the products over a long period of time without encountering any problem (South China Morning Post, 2011).
- In **Scandinavia**, a 2009 survey by the Nordic Council found that less than half of respondents (37%-48%) regularly read declarations on food products (Norden, 2009a).
- In the **U.S.**, the IFIC Foundation's 2011 Food & Health Survey found that 68% of consumers report looking for the nutrition label, or Nutrition Facts panel (NFP), when making purchasing decisions; 24% report using nutrition content information on the front of package and 16% report using a health symbol or icon (IFIC Foundation, 2011). Of those that report looking at the Nutrition Facts panel, 68% report using calorie information on the NFP, 67% report using total fat, 61% report using sodium, 55% report using sugars and 53% report using saturated fat among other nutrients listed on the NFP. These findings are similar to those of the U.S. FDA's 2008 Health and Diet Survey, which found that more than half of consumers (54%) report using food labels, especially when buying a product for the first time (U.S. FDA, 2010). 66% of consumers in the Health and Diet Survey reported using the food label to see whether a food is high or low in calories, salt, fat or vitamins and 55% of consumers report using it to have a general idea of the nutritional content of the food.
- In **Ireland**, over 2 out of 3 grocery shoppers state that they occasionally or often look at food labels that display information in relation to fat, sugar, salt and other nutrients. Over half of those that use food labels are more likely to use BOP information to ascertain the nutritional content of the product, while one in four shoppers look for nutritional information on the FOP (Irish Heart Foundation and Others, 2010).

However, qualitative findings from the IFIC Foundation's research suggest that consumers tend to report greater frequency of considering nutrition information than actual usage (IFIC Foundation, 2008). A 2010 **German** study, the **UK** FSA's 2009 review of FOP labels and EUFIC's 2008 survey confirm this discrepancy between reported use and actual use in **Europe** (EUFIC and MAPP, 2008; UK FSA, 2009c; BMELV, 2010). While EUFIC's 2006 literature review found that between 31 and 63% (Grunert and Wills, 2007) of **European** consumers report checking nutrition labels, EUFIC's 2008 in-store survey found that actual consumer use is much lower, varying between 8.8% (**France**) and 27% (**UK**) (EUFIC and MAPP, 2008; Grunert *et al.*, 2009).

## 2.2 Consumers use a variety of information to evaluate a food product's "healthiness"

The nutrition information that consumers use to assess a food product's "healthiness" differs from country to country. Fat, calories and preservatives are the three items that consumers globally look at the most, according to Nielsen's 2008 global survey (Nielsen, 2008). When the sample is limited to consumers in **Germany, Hungary, the UK, France, Poland** and **Sweden**, respondents look mainly at calories, fat, sugar and salt to judge a product's healthiness (EUFIC and MAPP, 2008; Grunert *et al.*, 2009). Most **UK** and **French** consumers look at GDAs and then the Nutrition Table for nutrition information, while consumers in **Germany, Sweden, Poland** and **Hungary** look mostly at the Nutrition Table, followed by GDAs (**France, Germany**) and the ingredients list (**Sweden, Poland, Hungary**) (EUFIC and MAPP, 2008; Grunert *et al.*, 2009). Consumers in **Ireland** look for nutrition information, calorie content and the ingredients when they consult food labels (Food Safety Authority of Ireland, 2009). **Norwegians** and **Danes** are most concerned about fat, whereas **Swedes** pay more attention to sweeteners (Norden, 2009a)

Consumers elsewhere consider the ingredients list, organic and allergen labels and the use of additives and preservatives in addition to the nutrition information. IFIC found that ingredient information was of importance for **U.S.** consumers who looked at nutrition information on food product labels, as nearly half (47%) of respondents claimed to look at the ingredient list (IFIC Foundation, 2010). In **Canada**, most consumers look for the ingredients list (80%) and Nutrition Facts table (71%), but there is little evidence that consumers understand how to use the Nutrition Facts Table to any great degree, according to the Ethnographic Survey results (CCFN, 2010).

Some studies suggest that how information about nutrients is presented influences the weight consumers place on the information. The IFIC Foundation's research found that larger and bolder calorie lines on the back-of-pack do not encourage consumers to consider the nutrition facts panel. However, a quick overview of the number of servings and calories per serving provided on the FOP could be helpful (IFIC Foundation, 2008). Their 2003 research on trans fat labels found that U.S. consumers found the addition of a trans fat line useful, but when trans fat was treated as a footnote, consumers placed disproportionate weight on the information (IFIC Foundation, 2003).

Some consumers look beyond nutrients when determining the "healthfulness" of a food product; for example, **U.S.** consumers also consider "organic" and allergen labelling (Kim *et al.*, 2001). Some consumers in **Germany, Hungary, the UK, Poland** and **Sweden** look at carbohydrates, vegetable content, appearance, fibre, saturated fat and the ingredients list when choosing pizzas and ready meals (EUFIC and MAPP, 2008; Grunert *et al.*, 2009). **UK** consumers also consider whether the product is part of a "healthy" range and whether the product is organic (UK FSA, 2009c). **Thai** consumers tend to look (from most to least frequently) for the presence of food additives and the amount of sugar, protein, total fat, presence of vitamins, and the amount of calories/energy (AFIC, 2007a). Most **Indian**

consumers who check food labels look for the product's fat content (60%), followed by preservatives (52%), protein (48%), carbohydrates and additives (46%), colouring (45%) and sugar (44%) (Economic Times, 2008). **Malaysian** consumers place importance on fat (56%), preservatives (51%) (AFIC, 2006) and vitamin and mineral content (AFIC, 2009).

### 3. What do consumers easily understand?

Research on consumer understanding has focused on how consumers respond to different nutrition labelling systems (e.g. health logo, traffic lights, GDAs) as well as which labelling system they prefer and which terms they understand. While a study by the Food Safety Authority of Ireland suggests that only one-third of consumers think nutrition labelling should be placed on the FOP, other studies concur that consumers prefer FOP labels, but they diverge on which form of simplified labelling is most effective (Food Safety Authority of Ireland, 2009).



#### 3.1 Consumer response to judgement of nutritional quality labels

Consumer research on labels that judge the nutritional quality of food (e.g. traffic light colour-coding, NuVal) presents a mixed picture. Some research (e.g. in the **UK, Australia, New Zealand** and **United States**) has found that consumers like the traffic light scheme because it is simple and easy to understand at-a-glance. Some studies show that consumers like and understand traffic light colour-coding, but other studies suggest that it is unclear whether the format influences shopping behaviour (e.g. in **Germany**), may not be informative (e.g. in **Ireland**) and may be misinterpreted (e.g. in the **UK** and **France**).

**United States:** A 2010 U.S. FDA study that assessed the use of FOP schemes by consumers to make healthful choices found that traffic light labels were more likely to be perceived as government-sponsored and less likely to be seen as company-sponsored (Jordan Lin and Levy, 2010). A recent literature review by the Rudd Center for Food Policy and Obesity at Yale University found that the traffic light scheme has the most research supporting its use and helps consumers rate healthfulness and choose between two products (Brownell, 2010). The Rudd Center also conducted consumer research on five FOP schemes (control, three traffic light schemes and Healthy Choices) and presented preliminary findings to the IOM Committee on Examination of FOP Nutrition Rating Systems and Symbols (Brownell, 2010). It found that

multiple traffic lights for calories and labels that provide an anchor (e.g. average daily calorie intake) are the most helpful (Brownell, 2010).

An earlier study by the Transatlantic Consumer Dialogue (TACD) and Center for Science in the Public Interest (CSPI) observed that 74% of American, 89% of British, 88% of Spanish and 87% of Hungarian respondents would find it "useful if food products had a label on the front of the package showing whether the level of calories, fat, sugar and salt are high, medium or low." This is taken to mean traffic lights because TACD's February 2007 position paper recommends the adoption of traffic lights in the United States and across Europe.

Consumer research on the NuVal scheme shows that the majority of consumers find the scheme useful (49%) or somewhat useful (46%), and that 78% of consumers claimed to be more likely to purchase products with a higher NuVal score, however it is understood that these findings have not been published.

**France:** Awareness of the colour-coding system in France is low, and only a minority of shoppers have heard of (15%) or seen (23%) the colour coding system (Intermarché's Nutri-pass) on food products (EUFIC and MAPP, 2008). French consumers believe their understanding of the colour-coding system is relatively high (6.7 on a 1-10 scale). Most Intermarché shoppers understand that the Nutri-pass refers to one serving of food (60%) and that the "orange" colour means the food provides an important amount of some nutrients (78%). Interpretation of the "orange" colour was somewhat exaggerated with most consumers (63%) believing they "should try not to eat this product." Intermarché states that the "orange" colour simply represents a high amount of sugar, fat or salt and reminds consumers that they should balance their diet with other foods in the same meal and with the next meal.

**Germany:** A study concludes that Germans benefit from traffic light labels the most but that food label formats had no detectable influence on food consumption (Borgmeier, and Westenhoffer, 2009). The study concludes that even if traffic light labels are well understood, they are unlikely to change consumers' everyday behaviors and will probably not lead to the desired prevention of diet-related diseases (Borgmeier, and Westenhoffer, 2009). The Federal Ministry of Food, Agriculture and Consumer Protection (BMELV)'s March 2008 survey found that when asked whether a colour-coded design would influence their shopping behaviour, 55% of respondents agreed while 34% of respondents disagreed (BMELV, 2008).

**UK:** The FSA's most recent review of FOP labelling found that levels comprehension of different FOP labels are generally high, ranging from 58% to 71%, but that two formats, traffic light GDAs with text (the words high, medium and low) and traffic lights with text, elicit the highest levels of comprehension (UK FSA, 2009c). Consumer organisation Which? observed that the multiple traffic light scheme was preferred over various versions of a GDA-based system, as 97% of respondents reported understanding the UK FSA traffic light scheme (Which?, 2007). 79% of parent consumer group Netmums respondents said they prefer traffic lights because they are "quick and easy to use" (Netmums, 2007).

A weakness of traffic light labels is that UK consumers have a tendency to over-interpret the labels, according to EUFIC's 2008 study. While most consumers understand that green means "This is a healthier option" (as defined by the UK FSA), most consumers believe orange means "It's fine to have this product occasionally as a treat" rather than the intended meaning, "This is an OK choice most of the time" (EUFIC and MAPP, 2008). Most consumers also exaggerate their reactions to the red traffic light. A majority (73%) of respondents believed a red traffic light means "I should try not to eat this product" instead of the UK FSA's actual definition, "It's fine to have this product occasionally as a treat." Just over a third of



**Figure 4. Consumer Response to Traffic Light Labels**

Which of the following statements do you think best describes what each colour means? (correct answers are indicated by the pattern)

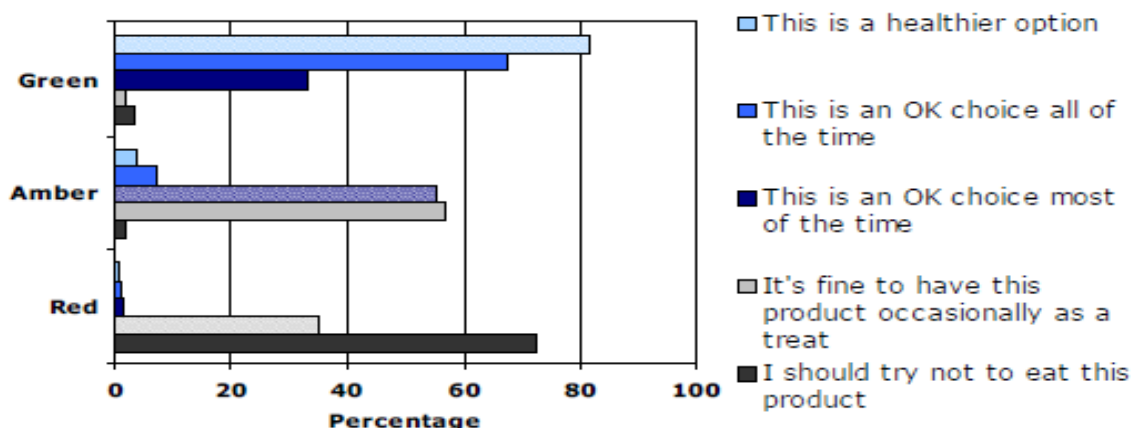


Image Credit: EUFIC and MAPP, 2008

respondents (35%) correctly defined the meaning of the red traffic light.

Other misinterpretations and false assumptions were highlighted in previous independent research commissioned by the UK FSA (Clegg and Lawless, 2008; UK FSA, 2009b). One survey found that 51% of respondents agreed that "You should avoid/try not eating or drinking foods and drinks high in fat and/or sugar at all," compared to only 34% of respondents who answered correctly that "You should eat or drink a little foods and drinks high in fat and/or sugar" (UK FSA, 2007a). Another survey found that some consumers thought the colours were not meaningful in any way, were nutrient-related (e.g. saturated fats are always shown in red) or were used to make the label stand out on the packaging (UK FSA, 2009b). Wheel-shaped traffic lights were also confused with pie charts, and some consumers thought the wedge size was supposed to be meaningful.

**Ireland:** Research published in December 2009 by the Food Safety Authority of Ireland found that less than half (39%) of consumers said they found the traffic light system most informative (Food Safety Authority of Ireland, 2009). Only 8% of consumers found the traffic light/GDA combination most informative. On the other hand, research conducted by the Irish Heart Foundation and Others found that 55% of grocery shoppers think that a traffic light label with GDA was more informative regarding nutritional content compared to the 29% who favoured a monochrome GDA food label when shown a picture of the two label formats. It was also found that shoppers colour-coded labels easier to use in comparing products, easier to determine the nutritional value and that shoppers were more likely to use traffic light labels in the future than the monochrome food label. Over 80% of those surveyed stated the words high, medium and low, combined with the colours red, amber and green, helped them determine the nutritional content of a product. However, the research also found that there is confusion in relation to the meaning of the colours red and green on a food label where the words high, medium and low are deleted from a label. (Irish Heart Foundation and Others, 2010).

**Australia:** The highest proportion of consumers thought colour coded %DI labels would be the easiest to use but their actual ability to compare between food products was most accurate when using the traffic light system, according to research commissioned by a coalition of consumer and health organisations (Kelly, B. et al., 2008). A study by the National Heart Foundation of Australia however found that traffic lights, %DI and the Heart Foundation Tick were equally effective in helping consumers across all socioeconomic groups



to accurately choose the healthier food (Heart Foundation, 2008). Food manufacturer Sanitarium tested its Health Eating System against the UK traffic light model and food industry's Daily Intake Guide (DIG) in order to ascertain consumer preferences, usefulness and aspects of comprehension. It found that the vast majority (65%) of consumers prefer the Health Eating System when presented with the three options. The study found that more respondents were able to correctly identify the healthiest food using traffic light labels (86%) and the Health Eating System (90%) than with DIG labels (54%) (Sanitarium, 2011).

**New Zealand:** Consumers arrive at similar evaluations when viewing "healthier" cereals regardless of the labelling system used, but traffic light labels help consumers make more accurate evaluations of less healthy cereals, a Massey University study found (Massey University, 2008).

### 3.2 Consumer response to percent of daily consumption labels

Some studies in **North America** show that this kind of information when presented in the form of a Nutrition Facts table on the BOP alone is not well understood (IFIC Foundation, 2008 and 2010). Recent research suggests that supplying such information on the FOP for calories, important nutrients such as saturated fat, sodium and sugars as well as "nutrients to encourage" helps with decision-making and understanding (IFIC Foundation, 2010). Additional research in **Europe** and **Australia** shows that consumers find FOP information about the percent of daily consumption (e.g. GDAs, %DI) useful and informative, particularly if they already have a working knowledge of how the concept works or if the concept is explained, because it provides more details than the traffic light scheme.

**EUROPE:** EUFIC's 2008 research found that consumer understanding of GDAs varies across Europe, but is generally high. European consumers rank their subjective understanding of GDAs between 5.3 (**Germany**) and 7.1 (**Poland**) on a scale of 1-10 (EUFIC and MAPP, 2008; Grunert et al., 2009). Between 61% (**UK**) and 26% (**France**) consumers were able to define correctly the GDA system when presented with multiple choice answers. A majority of consumers in the **UK** (74%), **Germany** (58%) and **Sweden** (51%) can use GDAs on multiple products to infer whether consumption of one serving of each product would exceed, equal or be less than the recommended guideline daily amount of a specific nutrient. Correctly understanding GDAs is more likely among younger people and consumers with higher

Figure 5. Consumer response to percent of daily consumption labels

#### GDAs subjective understanding

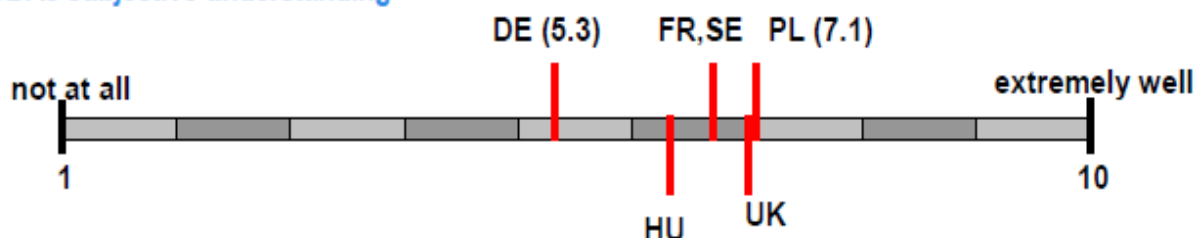


Image Credit: EUFIC and MAPP, 2008

nutrition knowledge (in the six countries EUFIC surveyed in 2008) and higher social grade (in **France, Sweden** and the **UK**).

Other studies on percent of daily consumption labels are as follows:

**UK:** A 2008 survey of 560 respondents carried out by *The Daily Mirror* newspaper concluded that 85% of its readers think that GDAs are easy to understand (Mirror Group, 2008). Tesco's consumer research found that 52% of consumers said that GDA signposts told them all they needed to know compared to 32% of consumers who said the same for traffic lights (Tesco, 2007). The research showed that 34% of customers said that GDA signposts would make them think more about the products they bought compared to 26% of customers who said the same for traffic light labels. Tesco concludes that GDA labels help customers make healthier choices by providing them with everything they need on one label. In a similar vein, respondents to the Netmum survey who favoured the GDA scheme liked it because it gave them more information and they considered the other scheme too simplistic, though overall the Netmum survey favoured traffic lights (Netmums, 2007).

Some consumers also find GDAs confusing, however, as UK FSA-commissioned research indicates (Clegg and Lawless, 2008). Some consumers do not understand whether GDAs apply to everyone and other consumers think they must mathematically manipulate the GDAs. There is also some confusion about the meaning of the percentages, as some consumers understood a GDA of 17% for salt to mean that 17% of the product was salt. Other consumers believed the GDAs should add up to 100%.

**Germany:** The Federal Ministry of Food, Agriculture and Consumer Protection (BMELV)'s March 2008 survey concluded that approximately 82% of respondents agreed that the presentation of nutritional values as a percentage of GDA is informative, clear and easy to understand (BMELV, 2008).

**France:** The Consumer Association (CLCV) and Ministry of Agriculture and Fisheries (DGAL) 2007 survey tested four displays of GDAs (table, bars, circles, tabs) and found that most consumers preferred the table display (CLCV, 2007).

**Belgium:** A majority of consumers (59%) were aware of GDAs in a survey by the food and drink industries association (FEVIA). Among those who knew about GDA labelling, over 50% said they favoured the percent daily value amounts over the gram or milligram amounts (29%) (FEVIA, 2010).

**Ireland:** The Irish Heart Foundation and Others found that the majority of grocery shoppers who are aware with GDA incorrectly think that GDA means your daily allowance of a nutrient rather than the upper limit of a nutrient for that day (Irish Heart Foundation and Others, 2010). However, an earlier study by the Food Safety Authority of Ireland found that 53% of Irish consumers consider GDAs to be a useful tool for judging nutritional value (Food Safety Authority of Ireland, 2009). While GDAs were not fully understood by most people, consumers considered GDAs informative when explained. Many people misinterpreted %GDAs as being the percent of the nutrient in the pack. There was also confusion about whether the percentage figure related to the pack or to a single serving. The qualitative research found that food labels with the most impact contain a standardised GDA table, large text, GDAs on the FOP and use eye-catching visuals and colours.

**Australia/New Zealand:** FSANZ's 2006/07 Consumer Study on percent daily intake (%DI) found that use of percent recommended daily intake (%RDI) was very low and the perceived difference between %RDI and %DI information was virtually nonexistent, likely because the %DI scheme was relatively new (Food Standards Australia New Zealand, 2007). The AFGC's FOP % Daily Intake Guide (DIG) Labels and consumer education programmes in Australia (e.g. MyDailyIntake.net) were introduced in 2006. In contrast to FSANZ's earlier findings, results from new consumer research by AFGC indicate that nearly three-quarters of Australian consumers are aware of DIG labelling and more than one in three consumers say they have used it (Australian Food Grocery Council, 2008). Reported use of DIG labels has increased rapidly (11%) in only six months (Australian Food Grocery Council, 2008).

**Figure 6. Front-of-Package Labeling Schemes Tested by the United States Food and Drug Administration**

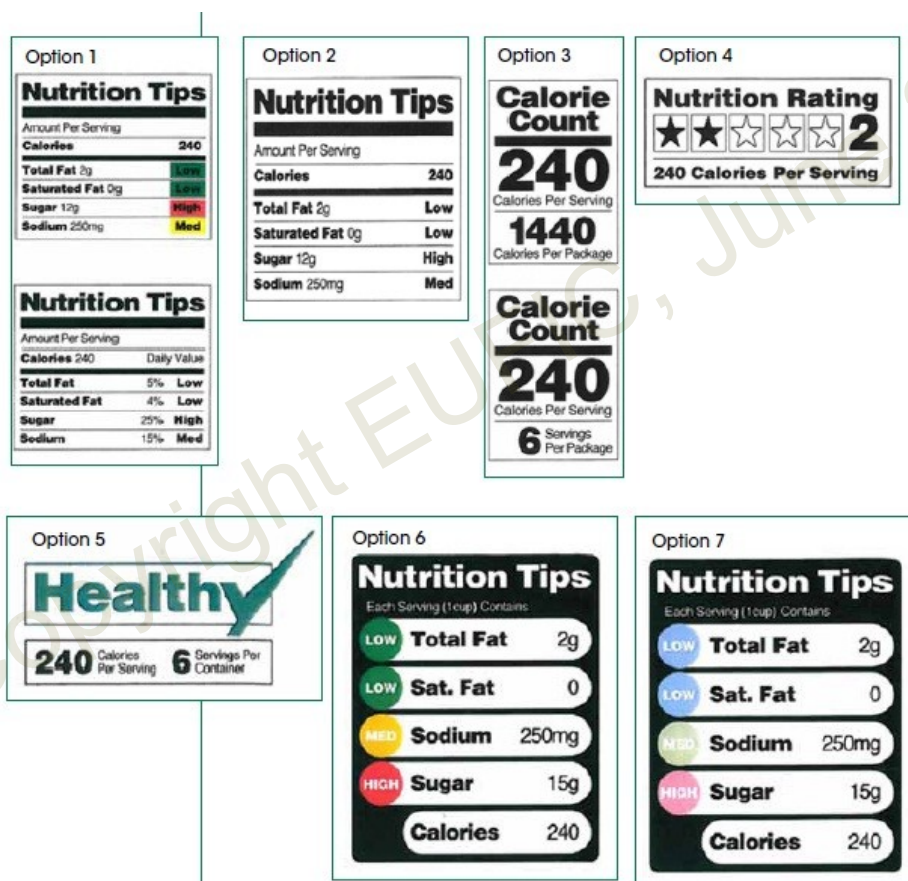


Image Credit: United States Food and Drug Administration

**United States:** One of the U.S. FDA's studies released in 2010, which assessed the use of FOP schemes by consumers to make healthful choices, found the Nutrition Facts Panel (NFP) to be most helpful, however a second study by the U.S. FDA found that the NFP is not practical as a FOP scheme (Jordan Lin and Levy, 2010). The IFIC Foundation's Food Label qualitative research found that most consumers rely more on gram information for nutrients rather than percentages which they find "confusing." In addition, most respondents stated that they do not understand percent daily value (DV) concept and do not use the percent DV

to see how foods and beverages contribute to their overall daily diet. Some thought that the percent DV referred to a product's composition (e.g. a product with fat at 10 percent DV per serving is perceived to be made of 10% fat) The IFIC Foundation's Food Label quantitative research found that alternative ways of presenting the percent DV may help consumers consider food and beverage choices in the context of their daily diet. (IFIC, 2008). The IFIC Foundation's 2010 FOP research suggests that showing calories and both "nutrients to limit" and "nutrients to encourage" on the FOP may be most helpful for consumers (IFIC Foundation, 2010).

**Canada:** Approximately 71% of respondents deem the Nutrition Facts Panel generally easy to understand, according to surveys by the Union des consommateurs and l'épicerie, a French-language television program (U.S. FDA, 2009d). However, CCFN's 2010 Ethnographic survey showed little evidence that consumers understand how to use the Nutrition Facts Table to any great degree (CCFN, 2010).

### 3.3 Consumer response to health logos

Consumer research shows that health logos are easy to recognise, but may not provide enough information for consumers to determine the healthiness of a product, as they provide less information than other formats (Just Food, 2008). This was a key finding of the European Heart Network's 2008 review of consumer literature on FOP schemes (European Heart Network, 2008). Nonetheless, some consumers (23% of Canadian consumers according to CCFN, 2009) who look at nutrition labels tend to look for health claims or a healthy, better choice slogan, symbol, or label and they admit to relying on simpler messaging on packages to a great degree. Research on some leading health logo schemes is summarised below.

**Smart Choices:** A 2010 U.S. FDA study which examined various nutrition labels, including the Smart Choices programme, found that nutrition-based symbols were more helpful than the summary symbol and were more likely to result in the correct identification of the healthier product, particularly for cereal products. On the other hand, the Rudd Center found that consumers successfully rated products carrying the Smart Choices symbol as "healthier". However it also found that 64% of the 100 products evaluated in the Smart Choices programme did not meet the Nutrient Profile Model criteria (Brownell, 2010).

**Choices:** A study on the Choices logo in the **Netherlands** found that correct interpretation of the Choices logo varied, as some respondents understood it to mean product quality, safety and natural or organic (Vyth et al., 2009). However, results of a study in the **UK, Germany, Italy** and the **Netherlands** by the Unilever Food and Health Research Institute indicate that respondents found all of the tested nutrition labelling formats (Choices logo, Multiple Traffic Lights, Stars, Smileys, Wheel of Health and a Health Protection Factor) easy to understand. The study also found that consumer responses to health logos not only vary by country, but their responses also depend on the organisation that endorses or sponsors the logo (Fuenekes et al., 2008). The Dutch study on the Choices logo further supports this finding as qualitative analysis showed that the logo's credibility would improve if it became public that it was supported by governmental and scientific authorities. A factor that might negatively influence the logo's perception is if it is seen as a "marketing stunt" developed by the food industry (Vyth et al., 2009).

**Keyhole:** Awareness of the Keyhole symbol in Sweden is over 95% and consumers believe they understand the Keyhole better than other labelling systems (GDAs and traffic lights) (EUFIC and MAPP, 2008). A majority of consumers (71%) claimed to know that the Keyhole symbol helps to identify healthier foods of the same category or type, but a smaller proportion (55%) of consumers correctly used the Keyhole symbol when asked to identify food products which contained less fat, less sugar and less salt and more fibre than food products of the same type. These results suggest that Swedish consumers are aware of and understand the Keyhole symbol, but some consumers consider other factors when identifying healthier foods.

**Heart Foundation logos:** Heart-healthy claims receive a mixed response, with varying levels of awareness and trust. In December 2005, a study on the **Finnish** Heart Association and Finnish Diabetes Association's jointly administered Heart Logo scheme found that 82% of the adult population recognized the logo and 42% of respondents said that it influenced their purchases. In 2009, a Datamonitor survey in the **UK** revealed that 45% of respondents said heart health claims are untrustworthy and only 12% believed they could be trusted (Datamonitor, 2009). A 1999 study on the Pick-the-Tick logo in **Australia** and **New Zealand** showed that 89% of consumers were aware of the logo without being shown it, and 96% of consumers recognised the logo when shown (Gander and Harding, 1999). In October 2010, the American Heart Association (AHA) presented research to the IOM Committee on the examination of FOP label information. AHA found that the AHA Heart Check is well-recognized in the **United States**.

## 4. Why do consumers not use nutrition labels?

**Barriers to use of nutrition labels in Europe, Australia, United States, China, Malaysia, and Canada are as follows:**

- Lack of time and nutrition knowledge (Grunert and Wills, 2007; Buxel and Grossmann, 2010; CCFN, 2009; UK FSA, 2009b; IFIC Foundation, 2008; L'Union des consommateurs, 2007)
- "Per serving" or portion sizes is considered inaccurate, unrealistic, variable and unintuitive to their personal consumption (IFIC, 2008; UK FSA, 2007c; L'Union des consommateurs, 2007; UK FSA, 2009b). However it is questionable whether portion sizes continue to be a barrier as recent findings from EUFIC and the University of Surrey demonstrate that at least half of respondents in six European countries consider portion sizes to be "exactly right" for 15 out of 19 food types studies (EUFIC, 2011). The study found that providing nutrition information per portion in addition to per 100g information increased consumers' ability to establish the nutrient content of a portion.
- Lack of awareness that information to help interpret choices within a daily context exists on the current Nutrition Facts Panel (IFIC Foundation, 2008)
- Information is considered too abundant, complex and abstract (AFIC, 2006; Van Kleef et al., 2007; UK FSA, 2009b)
- Functional numeracy/literacy (UK FSA, 2009b)
- Trust in labels (UK FSA, 2009b)
- Visibility of labels (UK FSA, 2009b)

A study by the EU-funded project FLABEL, led by EUFIC, examined what attracts consumers to labels despite such barriers (Bialkova and van Trijp, 2010). It found that label characteristics (e.g. display size, position on the FOP, colour scheme), familiarity with the



type of logo and location are key determinants of attentiveness to labels. Thus, it recommends displaying nutrition logos in a consistent location on the package to help consumers find the label and reduce overall shopping time.

## 4.1 Which consumer understands what?

The ability to understand nutrition labels varies between population groups within the same country. A test of actual understanding of various FOP nutrition labels in the **United States** showed that females, product consumers and people with college-level education or higher were more likely to correctly identify the healthier product (IFIC Foundation, 2010). The IFIC Foundation's 2010 research found that providing more information on the FOP decreases the accuracy gap among levels of education (IFIC Foundation, 2010).

In the **UK**, colour-coded GDAs performed better than Multiple Traffic Light labels in helping some ethnic groups compare two products (92% and 83% correct responses respectively) (UK FSA, 2009b). The UK FSA and some consumer groups claim that the concept of a "traffic light" scheme is understood by all segments in a UK sample (UK FSA, 2007c), though the most recent study suggests that certain segments of the population are less likely to be able to accurately interpret FOP labels in general (adults over age 65, people with lower levels of educational attainment and certain ethnic minority groups) (UK FSA, 2009b). For the **UK** population overall, multiple traffic lights led to more correct answers than colour-coded GDAs (UK FSA, 2009b).

A study of **New Zealand** consumers also found marked ethnic differences in the ability to use the nutrition information panel to determine if a food was healthy, with lesser differences between income groups (Gorton et al., 2008). Traffic light labels were understood better than %DI across all ethnic and income groups.

## 5. Does nutrition education help?

- Websites that educate consumers about diet and the health benefits of food are helpful, according to studies by EUFIC and IFIC Foundation (Grunert, 2007; IFIC Foundation, 2011).
- Knowledge of nutrition seems to trump the format of the label when it comes to identifying the healthier product. Consumers in the **UK**, **France**, and **Germany** were able to correctly identify healthier products at similar rates regardless of the labelling system used (EUFIC and MAPP, 2008). EUFIC's research suggests that consumers with better nutrition knowledge and an interest in healthy eating can correctly identify the healthiest product regardless of the way nutrition information is presented (colours, percents, logos) (EUFIC and MAPP, 2008).
- Explanations of how to understand nutrition labelling signposting schemes (e.g. traffic lights, GDAs) increased consumer understanding during two separate studies conducted in **France** and **Thailand** (AFIC, 2009; CLCV, 2007). A French study comparing consumer responses to a nutrition labelling scheme based on reference daily intakes found that after brief explanation of reference daily intakes, the proportion of respondents that understood how to use the nutrition labels increased from 30-35% to 47-48% (French Consumer, Housing and Living Federation (CLCV) and French Ministry of Agriculture and Fisheries, 2007). Consumers in Thailand preferred health logos before an explanation of other signposting systems was given. After receiving an explanation, they preferred star-rating labels over traffic-light labels (AFIC, 2009).

- **Websites that educate consumers about diet and the health benefits of food are helpful.**
- **Knowledge of nutrition seems to trump the format of the label when it comes to identifying the healthier product.**
- **Explanations of how to understand nutrition labelling signposting schemes (e.g. traffic lights, GDAs) increased consumer understanding.**



## 6. What impact do different schemes have?

Research on the impact of nutrition labels has been conducted mainly in Europe and Canada, but whether nutrition labels help consumers make healthier purchases is still largely unknown. To date, only UK retailers have provided sales data of the impact of nutrition labels.

### 6.1 Impact of judgement of nutritional quality labels on purchasing decisions

While the **UK** FSA's qualitative study suggests that traffic lights impact consumer choices (UK FSA, 2009) studies of sales figures tell a different story. A study published by Oxford University Press in October 2009 analysed the impact of traffic lights labelling on sales of "ready meals" and sandwiches using sales data from one retailer. It concluded there was no association between short term product sales and the healthiness of the products overall or for different demographic groups. The authors state that people may have intentions of using FOP labelling to select the healthier options, but "this study indicates that this may not be reflected in their actual shopping behaviour" (Sacks et al., 2009). The study was unable to demonstrate differential effects of traffic light labels on short-term purchasing behaviour, although it did find a significant effect on the overall sales of one of the food categories examined.

Another study that uses sales data from 168 stores in the **United States** showed a change in food purchasing immediately after the implementation of the Guiding Stars scheme, which was sustained over the following two years (2006-2008) (Sutherland et al., 2010). When the same 8-month period was compared one and two years later, sales of items earning a star rating increased 0.4% and 1.3% respectively. The study found that for a 4-week period one year after implementation, consumers purchased significantly more ready-to-eat cereals with stars (e.g. less added sugar, more dietary fibre) and fewer no-star, high-sugar and low-fibre cereals.

However, a recent study which comprised of a 10-week trial in an online grocery store in **Australia** found that traffic lights had no distinct impact on sales and that there was no evidence to support the notion that traffic lights are likely to alter consumer behaviour. The changes in sales pre- and post the introduction of traffic lights in the intervention store matched the changes in sale in a comparison store. The study concludes that "changes to nutrition labelling alone can be expected to have only modest effects on the healthiness of consumer food choices" (Sacks et al., 2011).

### 6.2 Impact of percent of daily consumption labels on purchasing decisions

GDA's may encourage some consumers to buy a product less frequently or to switch to healthier products. Most **UK** consumers claim that if a product they usually buy has high GDA's for one or more nutrients, they would buy the product occasionally (45%) or buy the same type of product but with lower GDA percentages (32%) (EUFIC and MAPP, 2008). Consumers in **Germany, Hungary** and **Poland** were more likely than consumers in other countries to say they would buy the product anyway, while consumers in **Sweden, France** and the **UK** were more likely to not buy the product. It must be noted that EUFIC's research looked at consumers' intention to buy/not buy rather than actual purchases.

**UK** retailer Tesco's impact assessment concludes that GDA's alter consumer behaviour (UK FSA, 2009b). Tesco found that sales of low-fat ready-made meals were 7% higher than sales



of higher fat ones after GDAs were introduced. Additionally, sales of lower-salt meals were 10% higher than higher-salt versions.

### 6.3 Impact of health logos on purchasing decisions

**UK** consumers have responded positively to Sainsbury's "Be Good to Yourself" logo (BEUC, 2006). Sainsbury's reported that sales of cereals displaying the logo increased 14% over a 12-week period from the time the label was launched compared to the 7% increase in cereal sales overall. Sales of "Be Good to Yourself" canned soups increased 125% on average in the period following implementation of the label.

On the other hand, Swedish and Canadian consumers give health logos a mixed review. Most **Swedish** consumers (44%) said they would buy a product even if it does not carry the Keyhole (EUFIC and MAPP, 2008). A majority of consumers (61%) always or occasionally look for other nutrition information on the package even if the keyhole is present. Only 27% of consumers say they do not look for other nutrition information if the Keyhole is present. A quarter of **Canadian** households have purchased one brand over another because of a healthy symbol, but half of all Canadian households said that logos weren't important in making decisions, according to Health Canada (L'Abbe, 2007).

### 6.4 Impact of a range of front-of-pack formats

Recent studies in the U.S. examine the effect of the coexistence of a range of FOP label formats. One of the U.S. FDA's 2010 studies indicated that FOP nutrition information competes with other FOP items for attention. It also found that all nutrient specific symbols were perceived as equally helpful and trustworthy. A 2010 research by the IFIC Foundation of various fact-based or GDA labelling schemes found that across all labelling schemes and for all product categories tested, a large majority of consumers were able to select the product considered to be "high health" (IFIC Foundation, 2010). At the Institute of Medicine Committee on Examination of Front-of-Pack Nutrition Rating Systems meeting, the American Heart Association presented research which shows that clutter on packages makes it more difficult for consumers to use and see the heart check icon. However, at the same meeting, research commissioned by Kellogg and General Mills was presented, which found that the amount of clutter on a food package did not affect awareness of fact-based nutrition labelling schemes on the FOP.

EUFIC's 2008 study found that in countries where multiple formats were tested similarly high proportions of consumers (over 70%) in the **UK**, **Germany**, and **France** were able to accurately infer the healthiness of a product regardless of the format (EUFIC and MAPP, 2008; Grunert *et al.*, 2009). A 2009 UK FSA study, however, states that the coexistence of a range of FOP labels in the marketplace creates considerable difficulty in comprehension for shoppers (UK FSA, 2009c). It found that some consumers do not realise that the traffic light colours have meaning, while other consumers believe that the presence of nutrients in a product is low if marked in a cool colour (blue or green) on monochrome labels.

### 6.5 Impact of nutrition labels on health

The first study to measure the impact of nutrition labels on weight loss was conducted by Washington State University (Mandal, 2010). It found that middle-aged people who reported reading nutrition labels but not exercising were more likely to lose weight than those who exercised. People who read labels and exercised had the greatest weight-loss success rates.

It also found that women were more likely to read food labels than men and were also more successful than men at losing weight.

## 7. Menu labelling

There is a growing body of research on menu labelling as regulators worldwide have taken an increased interest in extending nutrition labels to restaurants, although most studies are limited to North America and the UK. Menu labelling research looks at similar issues to those that were explored for FOP labels, e.g. awareness, reported use and impact.

- In **Canada**, just over one fifth (22%) of consumers say they look for nutrition information when buying food outside of a grocery store (CCFN, 2008).
- A study commissioned by the **UK** FSA found a low level of awareness of the provision of nutrition information in the catering sector (Navigator, 2009). Nonetheless, some **UK** consumers reported that nutrition information in catering outlets made them spend more time choosing 'supplementary' items, substitute one item for another, reduce the frequency of consumption of particular items and 'balance' their consumption with other aspects of their diet across the day or week. In the **UK**, A flash poll of 1,009 respondents conducted by restaurant voucher outlet MyVoucherCodes.co.uk showed that around one-third of respondents were against nutrition labels in restaurants. Over half of the respondents said that they would like to have the calorie information 'available on request', rather than printed on menus (Johnson, 2010).
- A literature review of menu labelling studies in the **United States** found that only five studies provide some evidence that calorie information may influence food purchases in a cafeteria or restaurant. Most of the studies, however, suggest a "weak or inconsistent effect" (Harnack, and French, 2008). As with nutrition labelling in supermarkets, there may be a discrepancy between the reported influence of menu labelling and the actual impact, as an October 2009 study found that over one in four consumers in New York (27.7%) said calorie labelling influenced their choices, but no change was observed in the calories purchased after the introduction of calorie labelling (Howlett et al., 2009). The influence of menu labelling on food consumption may be moderated by the product claims used (e.g. "great tasting") and on consumer motivation, a study in the United States found (Howlett et al., 2009). The provision of calorie information influenced consumers' food choices when a "low calorie" claim was presented but the menu item was higher in calories than expected. Calorie information was ignored when a "great taste" claim was made because consumers expected the food to be relatively high in calories (Howlett et al., 2009).

The assertion that menu labelling is impacted by other messages is supported by research conducted by Duke-NUS University and the public health department of Seattle and King County. The year-long study discovered that the implementation of nutrition facts to fast food menus in branches of the Mexican restaurant Taco Time had no impact on consumer behaviour. However, it was acknowledged that the lack of impact may have been due to the introduction of "healthy highlights" logos which identify healthier options at Taco Time on menu boards before the legislation was implemented (EU Food Law Weekly, 2011).

The purchasing behaviour of teenagers and adults in the United States appears to be barely influenced by the presence of calorie labelling, according to another study which focused on low- income, racially and ethnically diverse communities in New York City and Newark (which did not have mandatory labelling). Data was collected before and after the introduction of mandatory labelling in New York City. Before the introduction of



mandatory labelling, none of the teens in the study stated that they noticed calorie information in the fast food restaurants. Following the introduction, 57% of teenagers in New York and 18% in Newark said they noticed the calorie information, while a total of 9% said that the information influenced their choices when ordering. This figure is notably smaller than the 28% of adults who stated that they considered the information when ordering. Statistically no significant differences in calories purchased before and after labelling were found (Elbel et al., 2011).

Menu labelling may actually lead to a reduction in food purchases rather than healthier food choices, a study by Stanford University found (Stanford University, 2010). The study examined sales at 222 Starbucks coffee shops in New York, and concluded that while the posting of calories was linked to a 14% reduction in average calories per transaction, three-quarters of the reduction was due to consumers buying fewer items and one-quarter to them choosing lower calorie items.

While menu labelling may have limited effects on food choices for adults, a study by the University of Washington found that nutrition labels in fast food restaurants may lead parents to pick lower-calorie meals for their children (Tandon et al., 2010). Parents who were given nutritional information ordered an average of 102 fewer calories for their kids than those who were not. Interestingly, there were no differences between the groups when it came to parents' choices for themselves.

A March 2011 article published by the USDA Economic Research Service (ERS) concluded that after examining several different studies, "... the mixed results of these and other small-scale menu labeling studies suggest it is still too early to tell how restaurant calorie labeling will affect caloric intake. To fully gauge its impact, it will be important to monitor consumer food choices and restaurants' menu options over a longer period of time" (Morrison et al., 2011).



## 8. Limitations of nutrition labelling

Sometimes nutrition labelling may not lead to healthier choices for reasons that are unrelated to the format. This may be because some consumers may ignore signposting if it makes them feel coerced, while other consumers may choose to ignore signposting and nutrition information altogether, particularly if they find the number of FOP labels currently in use overwhelming, e.g. nutrition, organic, safety, quality, social and ecological.

Finally, choosing to eat a healthier diet with the help of on-pack nutrition information may depend more on a person's nutrition knowledge and health motivation than the format or placement of the label. One of the **United States** FDA's 2010 studies found that FOP symbols had a beneficial effect when health motivation was high and the healthier choice was counterintuitive. However, the FDA concluded that no FOP was able to encourage consumers to focus on nutrition if they had low motivation. Additionally, Sanitarium's study in **Australia** showed that respondents who regarded themselves as very health conscious were twice as likely to always read the DIG labels (30% compared to 14% overall) and that those who rated themselves as not very health conscious were 50% less likely to use the DIG system at all (68% compared to 45% overall) (Sanitarium Health and Wellbeing, Front-of-Pack Labelling: Which Traffic Lights?, April 2011).

These findings suggest that nutrition labelling is a useful tool for supporting healthy diets, but no FOP or BOP nutrition label can overcome a lack of health motivation. Thus, nutrition labels can be useful for consumers who wish to use them, but a multi-faceted approach is needed to motivate consumers to be health conscious.

## 9. On-going research

- In November 2010, the **U.S. Food and Drug Administration** announced that it will be conducting an experimental study to quantitatively assess consumer reactions to potential options for modifying the Nutrition Facts label format. The purpose of the study is to help enhance the FDA's understanding of consumer comprehension and acceptance of modifications to the Nutrition Facts label format. The study is part of the Agency's continuing effort to enable consumer to make informed dietary choices and construct healthful diets. Details: <http://edocket.access.gpo.gov/2009/E9-27720.htm>
- The **FLABEL** project ([www.flabel.org](http://www.flabel.org)), which is partly-funded by the European Commission's FP7 programme, is looking at how nutrition information on food labels can affect dietary choices, consumer habits, and food-related health issues. The project will end in July 2011. **EUFIC** is the co-ordinator of this project, and is working with 7 European Universities, and other partners.
- **EUFIC** worked with the University of Surrey (UK) to conduct a study on how European consumers interpret and use portion information on food and drink labels. The study covers issues such as whether portions should be based on what consumers *actually* consume or what they *should* consume, as well as how consumers think companies establish portion sizes. The findings will be submitted to a peer-reviewed journal. An executive summary is available at: <http://www.eufic.org/article/en/expid/forum5-Consumer-response-portion-information-food-drink-packaging/>
- **The Canadian Council on Food and Nutrition** released its first ever Ethnographic Survey Report on 22 October 2010. CCFN has also analysed with Dr. David Hammond from the University of Waterloo the longitudinal data of the Tracking Nutrition Trends

(TNT) V, VI and VII studies, which is currently in press in *Journal of Nutrition Education & Behaviour*. CCFN plans to launch TNT VIII in 2011.

- **Health Canada** suggested that research should be conducted to understand how Canadian consumers interpret and use FOP symbols along with the mandatory Nutrition Facts table and, in particular, how FOP symbols may influence food purchase behaviour. Research should explore consumer expectations regarding the roles, responsibilities and accountability of government, industry and other stakeholders for the proper management of these types of claims.
- **The International Food Information Council Foundation** has released all three phases of a consumer research project on the Nutrition Facts panel. The overarching goal of the International Food Information Council Foundation Food Label Research Project is to enhance **U.S.** consumers' ability to make healthful, balanced diet choices through the use of the Nutrition Facts Panel. The findings for phase one (ethnographies) and two (iterative focus groups) of this project are available at: [http://www.foodinsight.org/Resources/Detail.aspx?topic=IFIC Foundation Food Label Consumer Research Project](http://www.foodinsight.org/Resources/Detail.aspx?topic=IFIC%20Foundation%20Food%20Label%20Consumer%20Research%20-%20Phase%20I%20Summary%20Report.pdf). The findings from phase three (web-based quantitative, experimental design and survey) are available at: <http://www.foodinsight.org/Content/3145/FINAL%20IFIC%20Foundation%20Food%20Label%20Consumer%20Research%20-%20Phase%20III%20Summary%20Report.pdf>. A summary of key findings from the 2011 IFIC Foundation Food & Health survey, which highlights consumer attitudes to food, nutrition and health, including food labelling, is available at: <http://www.foodinsight.org/Content/3840/2011%20IFIC%20FDTN%20Food%20and%20Health%20Survey.pdf>.

The International Food Information Council (IFIC) Foundation, working with Perception Research Services (PRS), completed consumer research on FOP labelling, commissioned and supported by a grant from the GMA. The online study surveyed 7,363 consumers ages 18-70 to assess consumers' comprehension, comfort level, and interpretation of non-branded products using four labelling systems. A summary of key findings is available at: [http://www.foodinsight.org/Resources/Detail.aspx?topic=Front of Pack Labeling Consumer Research Project](http://www.foodinsight.org/Resources/Detail.aspx?topic=Front%20of%20Pack%20Labeling%20Consumer%20Research%20Project).

- **The International Food Information Council** will update its survey on functional foods/foods for health in 2011. The 2009 IFIC Functional Foods/Foods for Health Consumer Trending Survey is available at: [http://www.foodinsight.org/Resources/Detail.aspx?topic=2009 Functional Foods Foods For Health Consumer Trending Survey Executive Summary](http://www.foodinsight.org/Resources/Detail.aspx?topic=2009%20Functional%20Foods%20Foods%20For%20Health%20Consumer%20Trending%20Survey%20Executive%20Summary).
- The **United States Food and Drug Administration** is planning to undertake a study on how consumers react to multiple nutrition statements on food packages. The proposed study plans on examining consumer reaction to combinations of labelling statements, on the interaction of the different characteristics of those statements and whether or how the statements affect the use of the Nutrition Facts panel (Food Navigator, 2011).
- **The Rudd Center for Food Policy and Obesity at Yale University** plans to conduct evaluations of different FOP schemes and on which FOP system best lends itself to educational campaigns.
- **The Australian Food and Grocery Council** has undertaken new research to support its Consumer Education Campaign, which it is currently rolling out to help consumers understand and use Daily Intake Guide Labelling.

- The **Malaysian** Ministry of Health will conduct a 4<sup>th</sup> National Health and Morbidity Survey, which will touch on nutrition labelling. Timing for this survey could not be confirmed.
- Additional research commissioned by the **New Zealand Food Safety Authority, FSANZ**, and **New Zealand Ministry of Health** include:
  - ⇒ A review of the current literature on FOP labelling;
  - ⇒ Stakeholders' views on implementation; and
  - ⇒ Whether manufacturers would reformulate products if FOP labelling were introduced.

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## Conclusion

Based on the overview of the theory and practice of nutrition labelling carried out in this overview, this report reaches the following conclusions:

- **A global proliferation of nutrition labelling initiatives, both public and private, is underway.** A global effort is simultaneously ongoing to develop nutrient profiles, which will have an important impact on existing schemes.
- **Policy decisions should be based on science: the key question is how appropriate and meaningful nutrition information can be provided on the food label so that motivated consumers can act on their desire to improve their diets.** There is great interest among stakeholders and the research community in the potential of nutrition labelling to guide consumers in their product choices so as to enable them to adopt more balanced eating habits. In this respect, it is clear that what matters is the overall diet, not the consumption of an individual product. Yet opinions differ on what interpretational elements are most appropriate and meaningful from both a consumer and scientific perspective for helping consumers to make choices leading to a balanced diet.
- **In the United States, the FDA's increased attention to FOP labels is galvanizing the debate, and has made it clear that government-backing is needed to support a scheme's credibility.** With most **European** governments backing GDAs, the debate is moving toward which nutrients to display and whether to provide information per 100g/ml and per portion. However, additional forms of expression for FOP labels are still being debated in Europe and the **United States**. The **Asian-Pacific** debate remains focused on traffic light labels.
- **Nutrition labelling policy should take into account consumer use, interpretation, and understanding of different nutrition labelling schemes, but ultimately it is the impact on purchasing decisions and overall diets that matter.** The consumer research section of this report showed that these factors vary from country to country and between consumer segments. Most research on FOP formats has been conducted in **Europe** and **North America**. Given the potential for variance, studies in other regions are needed to understand better local consumer attitudes. Publicly available research on the actual impact of FOP nutrition labels is limited, particularly in the **United States**. Programs like Smart Choices, NuVal and Hannaford Guiding Stars have completed consumer research regarding consumers' preference for logos and intended use, but the overall impact is not publicly known as sales data are often proprietary.
- **There is general agreement that simple yet informative nutrition labelling is required.** Yet there is no agreement on how to achieve this goal. The need to declare the amount of nutrients as such is no longer very controversial, although views differ on the detail. Emphasis is placed on different nutrition information in different countries, thus it does not seem appropriate at this time to pursue a global, simplified nutrition label.
- **Nutrition labelling debates are often informed more by value judgements of what consumers like than research on what is effective in influencing consumer choices.** Some studies show that



judgement of nutritional quality labels, GDA-based labels and health logos have a sizeable impact on consumers' intention to purchase a product. This data is backed by recent consumer studies in **Europe** and **Australia**, which confirm that different labelling systems can be equally effective in helping consumers identify healthier options. The long-term impact of different labelling systems on overall diets remains unknown. Further consumer research seems to be needed in particular to address the following questions:

- ◇ **Do consumers make long-term healthier food choices as a result of having used nutrition information on food packaging?** Some research has shown that consumers understand and know how to use accurately various nutrition labels should they choose to do so, but little is known about whether consumers habitually make healthier purchases as a result. EUFIC's pan-**European** study and other studies have tested consumers' intended purchasing behaviour, but evidence (e.g. scanner data) of actual purchasing behaviour remains limited and is mostly from a few **UK** and **U.S.** retailers.
- ◇ **To what extent do nutrition labelling schemes have to be standardised to help consumers cultivate healthy eating habits?** Research by EUFIC in **Europe** and by the Australian Heart Foundation in **Australia** suggests that different labelling schemes can be equally effective in helping consumers identify healthy options, yet many groups discussed in this report assert that standardised nutrition labels are imperative. The **United States** FDA's plans to standardise the nutritional criteria on which FOP nutrition labelling must be based and its corresponding consumer research among others may provide new insights.
- ◇ **How can consumers best be helped to make good use of nutrition labels to make better food choices?** Research suggests that good use of nutrition labels is related to better nutrition knowledge, and that overall use is linked to health motivation. How can consumers be motivated to eat healthy? What awareness raising and education initiatives are most effective? Who should be the primary target of which information and education initiatives – parents, children, others?
- ◇ **Is nutrition labelling beyond packaged foods useful?** The menu labelling debate in the **United States** is amplifying calls for menu labelling in **Canada** and the **UK**. Further research is needed to fully gauge whether nutrition labelling beyond packaged foods has an impact on food choices

## Appendix I—Global overview of regulations

	Regulation	Nutrients and format	Front-of-pack guidance/ endorsement by government	Beyond Packaged Foods	What's in the pipeline?
<b>Codex Alimentarius</b>	Voluntary Guidelines	Energy, protein, carbohydrates and fat content per 100g/ml or per serving			<p>Considering amendments to section 3.2 of the Guidelines on Nutrition Labelling regarding the list of nutrients, legibility and mandatory or voluntary labelling</p> <p>Considering a "one plus seven" scheme which would require all pre-packed foods to label energy plus seven core nutrients (protein, carbohydrates, total fat, saturated fat, trans fat, sodium and sugars)</p>
<b>EUROPE</b>					
<b>European Union</b>	Voluntary unless claims are made	Energy value, protein, carbohydrate, sugars, fat, saturates, fibre and sodium per 100g/ml			Mandatory labelling, possible mandatory or voluntary FoP label based on GDAs
<b>Denmark, Norway &amp; Sweden</b>	Voluntary		Voluntary Nordic Keyhole	Sweden: voluntary menu labelling with the Keyhole	Voluntary Keyhole certification schemes for outdoor dining in Denmark and Norway based on the Keyhole in restaurants model is being developed
<b>France</b>	Voluntary				
<b>Germany</b>	Voluntary		Voluntary GDAs per portion for energy, sugar, fat, saturated fat and salt		
<b>Netherlands</b>	Voluntary		Voluntary Choices Logo		

	Regulation	Nutrients and format	Front-of-pack guidance/ endorsement by government	Beyond Packaged Foods	What's in the pipeline?
<b>United Kingdom</b>	Voluntary		Voluntary traffic lights for fat, saturates, sugar and salt per 100 g/ml	Calorie labelling in catering outlets	
<b>Turkey</b>	Voluntary	Nutrition Facts Panel			GDAs for energy, total sugar, total fat, saturated fat and salt
<b>NORTH AMERICA</b>					
<b>Canada</b>	Mandatory	Calories, fat, saturated fat, trans fat, cholesterol, sodium, carbohydrates, fibre, sugar, protein, vitamin A, vitamin C, calcium and iron  Per serving, %DV  Nutrition Facts Panel		Bill tabled in Ontario for menu labelling	Consideration of standardized FoP labels
<b>Mexico</b>	Mandatory	Energy, protein, carbohydrates (including sugar), fat, dietary fibre, sodium and nutrients for which a health claim is made or any other relevant nutrients  Per 100 g/ml or per serving  Energy to be expressed either in Kcal or kJ  Bilingual Nutrition Facts are permitted			

	Regulation	Nutrients and format	Front-of-pack guidance/ endorsement by government	Beyond Packaged Foods	What's in the pipeline?
<b>United States</b>	Mandatory	Calories, calories from fat, total fat, saturated fat, trans fat, cholesterol, sodium, total carbohydrate, dietary fibre, sugars, protein, vitamin A, vitamin C, calcium and iron  Per serving, %DV  Nutrition Facts Panel		Compulsory labelling for fast-food restaurants with 20 or more outlets and vending machines	Consideration of standardized FoP labels
<b>SOUTH AMERICA</b>					
<b>Argentina</b>	Mandatory	Energy, carbohydrates, protein, total fat, saturated fat, trans fat, dietary fibre and sodium  % DV  Per serving			
<b>Brazil</b>	Mandatory	Energy, carbohydrates, protein, total fat, saturated fat, trans fat, dietary fibre and sodium  % DV  Per serving			
<b>Paraguay</b>	Mandatory	Energy, carbohydrates, protein, total fat, saturated fat, trans fat, dietary fibre and sodium  % DV  Per serving			
<b>Uruguay</b>	Mandatory	Energy, carbohydrates, protein, total fat, saturated fat, trans fat, dietary fibre and sodium  % DV  Per serving			

	Regulation	Nutrients and format	Front-of-pack guidance/ endorsement by government	Beyond Packaged Foods	What's in the pipeline?
<b>Chile</b>	Voluntary unless claims are made				
<b>Venezuela</b>	Voluntary unless for special dietary use	<p>Energy, protein, carbohydrate, fat (all expressed in grams)</p> <p>Amounts of any nutrient claimed to have special nutritional value</p> <p>Vitamin A and vitamin D to be expressed in international units</p> <p>Energy values must appear in calories</p> <p>Per 100g</p>			
<b>MIDDLE EAST</b>					
<b>Israel</b>	Mandatory	Calories, protein, fat and carbohydrates		Legislation in progress for compulsory calorie information for restaurants	
<b>Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, United Arab Emirates</b>	Voluntary unless for special dietary use	<p>Vitamins and mineral content and nutritive value</p> <p>US nutritional labelling is acceptable</p> <p>Per 100g</p>			



	Regulation	Nutrients and format	Front-of-pack guidance/ endorsement by government	Beyond Packaged Foods	What's in the pipeline?
<b>ASIA</b>					
<b>China</b>	Voluntary	Energy, protein, fat, carbohydrates and sodium  Saturated fat, cholesterol, sugar, vitamin and mineral content remain optional  Per 100g/ml or per serving as a % NRV  Font size restrictions			Consideration of a FoP logo
<b>Hong Kong</b>	Mandatory	Energy, protein, carbohydrates, total fat, saturated fat, trans fat, sodium, sugars  Any nutrient for which a claim is made must also be declared  Per 100g/ml; per serving and per package			Food Composition database underway
<b>India</b>	Mandatory	Energy value in kcal, protein, carbohydrates, sugar and fat  Foods using hydrogenated fats or bakery shortenings must declare this on the label and mention that they contain trans fat  Per 100g			
<b>Indonesia</b>	Mandatory for foods containing or enriched with vitamins, minerals and/or other added nutrients and for certain types of foods e.g. baby foods, as specified by the Director-General	Energy, protein, total carbohydrate and fat  Breakdown of percentage of energy derived from fat, protein and carbohydrates must be displayed  Per 100g/ml and per serving			

	Regulation	Nutrients and format	Front-of-pack guidance/ endorsement by government	Beyond Packaged Foods	What's in the pipeline?
Japan	Voluntary	Energy, fat, carbohydrates (which may be represented by sugar or food fibre) and sodium  Per 100g/ml; per serving; per package or per other unit			
Malaysia	Mandatory	Energy, protein, carbohydrate, fat and total sugars  Other vitamins and minerals may also be declared if they are listed in the NRV and are present in significant amounts. Dietary fibre and cholesterol may also be declared.  Per 100g/ml and per serving  Nutrition Facts Panel (follows USDA)	Healthier Choice Symbol – however implementation on hold	Legislation in progress for compulsory labelling for fast-food outlets	Considering an alternative health logo system to the Healthier Choice Symbol programme.
Philippines	Voluntary unless claims are made or unless for special dietary use	Energy, fat, carbohydrates and protein  Per serving, %DV  Nutrition Facts Panel (follows USDA)	"Good-For-You" Seal (however, due to trademark issues, this will be changed to a "Healthier for You" Seal		House Bill 1469 – Nutrition Labelling Act of 2010 would make nutrition labelling mandatory. The House of Representatives are discussing the Bill  "Healthier for You" Seal expected to be implemented by July 2011
Singapore	Voluntary	Energy, fat, carbohydrates and protein  Number of servings per package and the serving size have to be declared  Per 100g/ml and/or per serving	Healthier Choice Symbol  Healthier Snack Symbol		

	Regulation	Nutrients and format	Front-of-pack guidance/ endorsement by government	Beyond Packaged Foods	What's in the pipeline?
South Korea	<p>Mandatory</p> <p>Foods that should have fat, trans-fat, sugar and sodium levels on the labels: bread, chocolate, processed milk, sausage (mixed with fish), instant noodle (cup), fruit and vegetable juice, kimbab (pre-packaged), hamburger, sandwich</p> <p>Foods that should have sugar on the label: candy, ice cake, fermented milk, soda drink, yoghurt drink, mixed drink</p>	<p>Calories, carbohydrate, protein, saturated fat, trans fat, sugar, sodium and cholesterol</p> <p>%NRV</p>	<p>Voluntary traffic light label for children's preferred food</p>	<p>Mandatory labelling for bakeries, fried chicken, pizza, fast food ,coffee franchises and any business with more than 100 stores selling "children's preferred foods"</p> <p>Mandatory menu labelling in restaurants since 2010</p>	<p>The Korean Food and Drug Administration is monitoring the effectiveness of the voluntary traffic light labelling scheme and will decide whether to make the scheme mandatory and/or to extend it</p>
Taiwan	<p>Mandatory</p>	<p>Energy, protein, fat, saturated fat, trans fat, carbohydrates and sodium</p> <p>Additional nutrients declared in a nutritional claim (if any) and other nutrients may be voluntarily declared.</p> <p>%DV</p>		<p>Mandatory menu labelling for fast food chains</p>	
Thailand	<p>Mandatory on 5 types of snacks targeted at special groups (e.g. children, elderly)</p>	<p>Energy, fat, carbohydrates, protein, saturated fat, cholesterol, dietary fibre, sugar, vitamin A, vitamin C, calcium, iron and nutrients as claimed</p> <p>Per serving, %DV</p>	<p>Mandatory FOP monochrome GDAs</p> <p>Voluntary label for snacks, sweets and baked foods with 25% reduced fat, sodium and sugar</p>		

	Regulation	Nutrients and format	Front-of-pack guidance/ endorsement by government	Beyond Packaged Foods	What's in the pipeline?
<b>AUSTRALIA &amp; NEW ZEALAND</b>					
<b>Australia</b>	Mandatory	Energy, protein, carbohydrate, sugars, fat, saturated fat and sodium  %NRV  Per serving and per 100g/ml	School canteens in New South Wales use traffic light labelling	Mandatory menu labelling in New South Wales and possibly forthcoming in South Australia	Review of food labelling, possibility of mandatory or voluntary FoP labelling
<b>New Zealand</b>	Mandatory	Energy, protein, carbohydrate, sugars, fat, saturated fat and sodium  %NRV  Per serving and per 100g/ml			Review of food labelling, possibility of mandatory or voluntary FoP labelling
<b>AFRICA</b>					
<b>Kenya</b>	Voluntary				
<b>Mauritius</b>	Voluntary unless for special dietary use	Protein, fat, carbohydrate, vitamin and mineral content  Per 100 g/ml			
<b>Nigeria</b>	Voluntary				
<b>South Africa</b>	Voluntary unless claims are made	Voluntary labels to contain nutrition information of the manufacturer's choice  %NRV  Per 100g/ml and per serving			

**Key to abbreviations in table:**

%DI – Percent Daily Intake ; %NRV – Percent Nutrient Reference Value;

GDA – Guideline Daily Amount; %DV – Percent Daily Value

**Appendix II – UK Food Standard Agency nutrient profiling****Table 1 – Food (per 100g whether or not they are sold by volume)**

	<b>Green (Low)</b>	<b>Amber (Medium)</b>	<b>Red (High)</b>	
<b>Fat</b>	≤ 3.0 g/100g	> 3.0 to ≤ 20.0 g/100g	> 20.0 g/100g	> 21.0g / portion
<b>Saturates</b>	≤ 1.5 g/100g	> 1.5 to ≤ 5.0 g/100g	> 5.0 g/100g	> 6.0g / portion
<b>Total Sugars</b>	≤ 5.0 g/100g	>5.0 to ≤ 15.0 g/100g	> 15.0 g/100g	> 18.0g / portion
<b>Salt</b>	≤ 0.30 g/100g	>0.30 to ≤ 1.50g/100g	> 1.50 g/100g	> 2.40g / portion

**Table 2 – Drinks (per 100ml)**

	<b>Green (Low)</b>	<b>Amber</b>	<b>Red (High)</b>
<b>Fat</b>	≤ 1.5 g/100ml	> 1.5 to ≤10.0 g/100ml	> 10.0g/100ml
<b>Saturates</b>	≤ 0.75 g/100ml	> 0.75 to ≤2.5 g/100ml	> 2.5g/100ml
<b>Total Sugars</b>	≤ 2.5 g/100ml	>2.5 to ≤7.5 g/100ml	> 7.5 g/100ml
<b>Salt</b>	≤ 0.30 g/100ml	> 0.30 to	> 1.50 g/100ml

Available at: <http://www.food.gov.uk/multimedia/pdfs/frontofpackguidance.pdf>



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## Appendix III - Stakeholder webpage directory

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### Food Information Organisations

Asian Food Information Centre: <http://www.afic.org/>

Canadian Council of Food and Nutrition: <http://www.ccfm.ca/>

European Food Information Council: <http://www.eufic.org/page/en/nutrition/food-labelling-claims/>

International Food Information Council: <http://www.ific.org/>

New Zealand Nutrition Foundation: <http://www.nutritionfoundation.org.nz/>

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### International/Regional Organisations

Codex Alimentarius: [http://www.codexalimentarius.net/web/index\\_en.jsp](http://www.codexalimentarius.net/web/index_en.jsp)

European Union (DG SANCO): [http://ec.europa.eu/food/food/labellingnutrition/nutritionlabel/index\\_en.htm](http://ec.europa.eu/food/food/labellingnutrition/nutritionlabel/index_en.htm)

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### Government Food Agencies

Food Standards Australia New Zealand: <http://www.foodstandards.gov.au/>

French Direction Générale de l'Alimentation: [http://agriculture.gouv.fr/spip/ressources.themes.alimentationconsommation.alimentationnutrition.etiquetagenutritionnel\\_r1083.html](http://agriculture.gouv.fr/spip/ressources.themes.alimentationconsommation.alimentationnutrition.etiquetagenutritionnel_r1083.html)

Health Canada: [http://www.hc-sc.gc.ca/fn-an/label-etiquet/nutrition/index\\_e.html](http://www.hc-sc.gc.ca/fn-an/label-etiquet/nutrition/index_e.html)

Hong Kong Food and Environment Hygiene Department (FEHD): [http://www.fehd.gov.hk/safefood/nutrient/index\\_nutrient.html](http://www.fehd.gov.hk/safefood/nutrient/index_nutrient.html)

Japanese Ministry of Health, Labor and Welfare: <http://www.mhlw.go.jp/english/topics/foodsafety/fhc/index.html> (Food with health claims, special dietary uses and nutrition labelling)

<http://www.mhlw.go.jp/english/topics/foodsafety/fhc/04.html> (Labelling system for nutrients)

<http://www.mhlw.go.jp/english/topics/foodsafety/fhc/03.html> (Food for special dietary uses and requirements in labelling)

New Zealand Food Safety Authority: <http://www.nzfsa.govt.nz/>

Philippines Department of Science and Technology: [http://www.dost.gov.ph/index.php?option=com\\_content&task=view&id=215&Itemid=92](http://www.dost.gov.ph/index.php?option=com_content&task=view&id=215&Itemid=92)

South African Department of Health: <http://www.doh.gov.za/>

Thailand Food and Drug Administration: <http://www.fda.moph.go.th/eng/index.stm>

United States Food and Drug Administration: <http://www.cfsan.fda.gov/label.html>

United States Department of Agriculture: [http://www.fsis.usda.gov/Regulations\\_&Policies/LabelingProcedures/index.asp](http://www.fsis.usda.gov/Regulations_&Policies/LabelingProcedures/index.asp)

UK Food Standards Agency: <http://www.food.gov.uk/healthiereating/>

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## Consumer Organisations

Center for Science in the Public Interest (CSPI) : <http://cspinet.org/nutritionpolicy/>  
 CLCV – French Consumer Association: <http://www.lepointurlatable.fr/index.php?id=34>  
 European Consumers Organisation (BEUC): <http://www.beuc.eu/Content/Default.asp?PageID=852>  
 Food and Consumer Products of Canada: <http://www.fcPMC.com/issues/labelling/index.html>  
 French Consumer Defense Association (CLCV): [http://www.clcv.org/index.php?v=pres\\_anglais](http://www.clcv.org/index.php?v=pres_anglais)  
 SIFO – Norwegian National Institute for Consumer Research: [http://www.sifo.no/page/English/Meny\\_knapper/10237/10281](http://www.sifo.no/page/English/Meny_knapper/10237/10281)  
 Netmums: <http://www.netmums.com/h/n/FOOD/HOME/ALL/356/#results>  
 Which? : [http://www.which.co.uk/reports\\_and\\_campaigns/food\\_and\\_drink/campaigns/nutrition/index.jsp](http://www.which.co.uk/reports_and_campaigns/food_and_drink/campaigns/nutrition/index.jsp)

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## Heart Organisations

American Heart Association: <http://www.americanheart.org/presenter.jhtml?identifier=1200000>  
 Australian National Heart Foundation: <http://www.heartfoundation.com.au/>  
 Canadian Heart and Stroke Foundation: <http://ww2.heartandstroke.ca/Page.asp?PageID=24>  
 European Heart Network: <http://www.ehnheart.org/content/default.asp>  
 New Zealand National Heart Foundation: <http://www.nhf.org.nz>  
 Slovenian Heart Foundation: <http://www.zasrce.si/>  
 South Africa Heart Foundation: <http://www.heartfoundation.co.za>  
 Thai Heart Association: <http://www.thaiheart.org/index.php>  
 UK National Heart Forum: [http://www.heartforum.org.uk/News\\_Media\\_pressreleases\\_Press\\_GDAreport\\_150207.aspx](http://www.heartforum.org.uk/News_Media_pressreleases_Press_GDAreport_150207.aspx)  
 World Heart Federation (List of National Members): <http://www.world-heart-federation.org/members/current-members/national/>

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## Nutrition Organisations

American Dietetic Association: <http://www.eatright.org>  
 Canadian National Institute of Nutrition: <http://www.cihr-irsc.gc.ca/e/12131.html>  
 Center for Food Safety and Applied Nutrition (CFSAN): <http://www.cfsan.fda.gov/list.html>  
 USDA Center for Nutrition Policy and Promotion: <http://www.cnpp.usda.gov/>  
 Groupe des Mousquetaires : <http://www.groupepedesmousquetaires.com/>  
 Netherlands Nutrition Centre: <http://www.voedingscentrum.nl/voedingscentrum/Public/Statisch/English+summary/>  
 Nutrient Rich Foods Coalition: <http://www.nutrientrichfoods.org/index.html>  
 NutriWeb Malaysia: <http://www.nutriweb.org.my/index.php>  
 ONQI: Yale Prevention Research Center: <http://www.davidkatzmd.com/howtohelp.asp>

### Canada

Dietitians of Canada, Canadian Diabetes Association, and Health Canada's Healthy Eating is in Store for You (HESY): <http://www.healthyeatinginstore.ca/>

Health Canada's Food Guide and Physical Activity Guide: [http://www.hc-sc.gc.ca/fn-an/food-guide-aliment/index\\_e.html](http://www.hc-sc.gc.ca/fn-an/food-guide-aliment/index_e.html)

Health Canada's Online Quiz: [http://www.hc-sc.gc.ca/fn-an/label-etiquet/nutrition/interactive/index\\_e.html](http://www.hc-sc.gc.ca/fn-an/label-etiquet/nutrition/interactive/index_e.html)

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### Europe

FLABEL : [www.flabel.org](http://www.flabel.org)

Cadbury's, Mars, Leaf: <http://www.betreatwise.org.uk>

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### United States

Center for Food Safety and Applied Nutrition (CFSAN)'s Make Your Calories Count Program: <http://www.cfsan.fda.gov/~ear/hwm/labelman.html>

Center for Food Safety and Applied Nutrition (CFSAN) Keystone Report documents: <http://www.cfsan.fda.gov/~dms/nutrcal.html>

Coordinated Approach to Child Health Eat Smart Cafeteria Campaign (GO, SLOW, WHOA foods): [http://www.sph.uth.tmc.edu/catch/curriculum\\_eat\\_smart.htm](http://www.sph.uth.tmc.edu/catch/curriculum_eat_smart.htm)

National Heart Lung and Blood Institute of the Department of Health and Human Services, National Institutes of Health's WeCan! Program: <http://www.nhlbi.nih.gov/health/public/heart/obesity/wecan/learn-it/go-slow-whoa.htm>

Smart Choices Program: <http://www.smartchoicesprogram.com/>

Spot the Block Campaign: [www.SpotTheBlock.com](http://www.SpotTheBlock.com)

United States Department of Agriculture's MyPyramid: <http://www.mypyramid.gov>

## Appendix IV - Summary of arguments of debate in Europe

The following statements summarise the commonly cited advantages and criticisms of judgement of nutritional quality, percent of daily consumption, and health logos, as described in position papers, press releases, and consumer studies in Europe.

FoP Scheme	Benefits	Drawbacks
<b>Percent of daily consumption (e.g. GDAs)</b>	<ul style="list-style-type: none"> <li>• Provides more detailed information</li> <li>• Puts product into context of daily needs</li> <li>• Based on typical portion size and not 100g</li> <li>• May encourage industry to reformulate</li> </ul>	<ul style="list-style-type: none"> <li>• Too complex</li> <li>• Are percentages understood?</li> <li>• Serving sizes vary between manufacturers, consensus is slow</li> <li>• Not clear that for fat, saturated fat, sugar, and salt these are recommended maxima and not targets to reach</li> <li>• No reference whether food is high, medium, or low i.e. no interpretive element</li> <li>• Better-for-you products not easy to recognise at a glance</li> <li>• How does one use them in a supermarket shopping situation?</li> <li>• Based on population average energy requirements, but individual energy requirements vary</li> </ul>
<b>Judgement of nutritional quality (e.g. Traffic Light)</b>	<ul style="list-style-type: none"> <li>• Simple, easy to use, quick</li> <li>• Evaluates the food and not the requirements of the individual eating the food</li> <li>• Red interpreted as don't eat too much, rather than don't buy</li> <li>• May encourage industry to reformulate</li> </ul>	<ul style="list-style-type: none"> <li>• Too crude and simplistic</li> <li>• Some consumers feel coerced</li> <li>• Doesn't put product into context of daily intake</li> <li>• Red interpreted as don't eat or buy</li> <li>• Per 100g and not per portion: for small portions, "bad" nutrients are magnified: large portions are misleading</li> <li>• Wide band/range within amber or red does not allow differentiation between "healthier" products in some categories. E.g. butter and low fat spread</li> <li>• Less industry incentive to reformulate if at top of band rather than on border of amber/red or green/amber</li> <li>• Erroneous impression of a big difference in levels between amber/red (when actually small), but a large difference in levels when within same band, e.g. same amber traffic light, but wide range</li> <li>• Some "red" products good source of other nutrients (e.g. cheese is red for fat, sat fat, salt, but good source of calcium, zinc)</li> <li>• Difficult to use to balance out a meal or when faced with unclear colour combinations (e.g. 2 amber/1 green/1 red on one label)</li> </ul>
<b>Health Logo</b>	<ul style="list-style-type: none"> <li>• Weighs positive and negative nutrients to give overall profile</li> <li>• Simple, quick, easy to understand</li> <li>• Independent schemes, e.g. from government, inspire confidence</li> <li>• Doesn't identify "bad foods"</li> <li>• May encourage industry to reformulate</li> </ul>	<ul style="list-style-type: none"> <li>• Doesn't provide complete information</li> <li>• Doesn't put product into context of daily intake</li> <li>• Less credible if a company system</li> <li>• Doesn't identify "bad foods": consumer activist perspective</li> <li>• Inconsistent criteria between schemes for profiling</li> </ul>

## Appendix V - Table of terminology

Term	Who uses it?	What does it mean?
<b>Daily Intake</b>	Australia, New Zealand (voluntary), United States, Canada, European Union,	<p>Daily intakes (DI) are a set of reference values for acceptable intakes of <u>energy</u> and a variety of nutrients, including <u>protein</u>, <u>fat</u>, <u>saturated fat</u>, <u>carbohydrates</u>, <u>sugars</u> and <u>sodium</u>.</p> <p>In Australia, DI are based on the Food Standards Code's listing for "the average adult diet" of 8700kJ. They represent an <i>acceptable</i> intake and can be used as a guide for a balanced diet.</p>
<b>Dietary Reference Intake</b>	United States	<p>An umbrella term that includes the following values: the Estimated Average Requirements (EAR), Recommended Dietary Allowance (RDA), Adequate Intake (AI), and the Tolerable Upper Intake Level (UL). They are to be used as a guide for a balanced diet. Dietary Reference Intake is used to determine the Recommended Daily Value in the United States and Canada. In the United States, "Dietary Reference Intake" replaces the term "Recommended Daily Amount" on nutrition labels.</p>
<b>Dietary Reference Value</b>	United States	<p>DRVs are a set of reference values for acceptable intakes of energy and a variety of nutrients that are sources of energy: fat, saturated fat, total carbohydrate (including fibre), and protein; and for cholesterol, sodium, and potassium, which do not contribute calories. DRVs for some nutrients (total fat, saturated fat, cholesterol, and sodium) represent the uppermost limit that is considered desirable.</p>
<b>Guideline Daily Amount</b>	Food industry, Germany, European Union, retailers	<p>Operators provide information for certain nutrients (e.g. energy, protein, carbohydrates, sugars, fat, saturates, fibre, and sodium) on a BoP label and four of these (energy, total fat, sugar, and salt) as percentages of GDAs on a FoP label or a simple FoP calorie label. Guideline Daily Amount values have been determined by the CIAA and European Union's draft proposal.</p>
<b>Health Logo</b>	Sweden, Denmark, Heart Associations, some retailers (e.g. Sainsbury's)	<p>A symbol placed on a food product that meets certain nutrition content requirements generally determined by the government or organisation. Sometimes operators must pay to use the logo.</p>



<b>Nutrient Reference Value</b>	China, South Korea, Australia, New Zealand, South Africa	The Nutrient Reference Values outline the levels of intake of essential nutrients considered to be adequate to meet the known nutritional needs of practically all healthy people for prevention of deficiency states.
<b>Nutrition Label</b>	Policymakers, manufacturers and retailers, nutrition and health organisations, consumer groups	The provision of information about the nutritional content of individual food products. It is most commonly applied to pre-packaged food and beverage products, but comes in a variety of formats. Variables include: the type and number of nutrients labelled, the reference values used, whether the information appears on front-of-pack (FoP) or back-of-pack (BoP) and whether the label gives any interpretative guidance to the consumer.
<b>Overall Nutrition Quality Index (ONQI)</b>	Dr. David Katz, United States, Topco Associates	ONQI stands for the "Overall Nutrition Quality Index," a nutrient profiling system developed by Dr. David Katz, Director of the Yale Griffin Prevention Research Center at Yale University. Dr. Katz uses an algorithm to determine a food's "nutrition quality score" – e.g. a reduced-sugar version of a product will not receive a better score than the original if the new version's recipe includes more salt.
<b>Recommended Daily Intake</b>	Australia, New Zealand, United States	Recommended Daily Intake (RDI) is the average daily dietary intake level that is sufficient to meet the nutrient requirements of nearly all (97.5%) healthy individuals in a particular life stage and gender group as defined by the National Health and Medical Research Council in Australia. In the U.S., "Reference Daily Intake" replaces the term "U.S. RDA," because of confusion that existed over "U.S. RDAs," the values determined by FDA in 1973 and used on food labels, and "RDAs" (Recommended Dietary Allowances), the values determined by the National Academy of Sciences for various population groups and used by FDA to figure the U.S. RDAs. However, the values for the new RDIs remain the same as the old U.S. RDAs for the time being.
<b>Recommended Dietary Allowance</b>	United States	The estimated amount of a nutrient (or calories) per day considered necessary for the maintenance of good health for nearly all (97-98%) healthy individuals in each life-stage and gender group by the United States Food and Nutrition Board of the National Research Council/ National Academy of Sciences in 1997. RDAs were created in 1941 to prevent diseases caused by nutrient deficiencies by helping evaluate and plan the nutritional needs of groups (e.g. schoolchildren, armed forces).
<b>Percent Daily Intake (%DI)</b>	Australia and New Zealand (Voluntary),	The percentage of daily intake (%DI) is the proportion of daily intake of energy or a nutrient in one serve of the food.
<b>Percent Daily Value (%DV)</b>	United States, Canada	The percentage of daily value (%DV) is a benchmark for evaluating the nutrient content of food to determine whether there is a large or small quantity of the nutrient in one serving. Daily Values are based on recommendations for a healthy diet.

<b>Per Portion</b>	EU	No standard portion size has been defined for foods.
<b>Per Serving or Per Serve</b>	U.S, Canada, Australia, New Zealand, Philippines, Thailand	Standard amount used to give advice about the quantity of food eaten. Serving sizes on food labels often refer to a specific amount of food (e.g. Serving Size 1 cup (228g).
<b>Traffic Lights</b>	UK Food Standards Agency, some UK manufacturers and retailers, South Korea	Uses the colours red, amber and green to show whether the nutrient content (e.g. sodium, sugar, fat, saturated fat, calories) of a food product is high (red), medium (amber), or low (green) based on a set of values generally expressed per 100g

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