

# Front-Of-Pack Nutrition Labelling: A Position Statement of the European Academy of Paediatrics and the European Childhood Obesity Group

Katarzyna Dereń<sup>a, b</sup> Łukasz Dembiński<sup>c, d</sup> Justyna Wyszynska<sup>a, b</sup>  
Artur Mazur<sup>a, b, d</sup> Daniel Weghuber<sup>b, e</sup> Edyta Łuszczki<sup>a</sup>  
Adamos Hadjipanayis<sup>d, f, g</sup> Berthold Koletzko<sup>h</sup>

<sup>a</sup>Medical College of Rzeszow University, University of Rzeszów, Rzeszów, Poland; <sup>b</sup>European Childhood Obesity Group (ECOG), Bruxelles, Belgium; <sup>c</sup>Department of Pediatric Gastroenterology and Nutrition, Medical University of Warsaw, Warsaw, Poland; <sup>d</sup>European Academy of Paediatrics (EAP), Geneva, Switzerland; <sup>e</sup>Department of Pediatrics, Obesity Research Unit and Division of Pediatric Gastroenterology, Hepatology and Nutrition, Paracelsus Medical University, Salzburg, Austria; <sup>f</sup>School of Medicine, European University Cyprus, Engomi, Cyprus; <sup>g</sup>Paediatric Department, Larnaca General Hospital, Larnaca, Cyprus; <sup>h</sup>Dr. von Hauner Children's Hospital, University Hospital, LMU – Ludwig-Maximilians-Universität Munich, Munich, Germany

## Keywords

Health promotion · Food labels · Childhood obesity · Front-of-pack label

## Abstract

**Background:** Due to the growing risk of obesity and related diseases in the population of children, effective preventive measures are of great importance. Front-of-pack (FOP) nutrition labelling may contribute to health promotion by increasing consumer awareness on the nutritional qualities of packaged foods and purchasing decisions, and it may stimulate food providers to improve the composition of products. **Summary:** Appropriate labelling should enable customers to make healthy choices quickly and intuitively. **Key Messages:** The European Academy of Paediatrics and the European Childhood Obesity Group makes an appeal to European Union legislators to immediately introduce a mandatory, uniform, and interpretative FOP nutrition labelling system.

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## Introduction

Prevention of childhood obesity is an important priority for public health given the >8-fold increase of the global prevalence of childhood and adolescent overweight and obesity during the last 4 decades [1–3]. In many European countries, this increase has been attenuated or halted, but overweight and obesity rates in children and adolescents remain very high, with major adverse effects on the quality of life, health, and life expectancy of affected individuals [4, 5]. Overweight and obesity predispose to type 2 diabetes and cardiovascular diseases, and they can also contribute to the risk for many types of cancer [6, 7]. Unless preventive and control measures are taken, the number of overweight children worldwide is estimated to reach 70 million by 2025 [8].

The observed increase in the prevalence of childhood obesity is a consequence of environmental and behavioural factors. The choices of food and drink consumption are one of the major modulating factors which have

**Table 1.** Characteristics of the FOP nutrition labelling [24]

Name	Countries (year implemented)	Nutrients included
Reference intakes label previously referred to as GDAs	EU-wide (2011)	Energy, fat, saturated fat, sugars, and salt, in grams and as percentage of daily reference intake
Nutri-score	France (2017) and Belgium (2018)	Graphic scale that divides the nutritional score into 5 classes (expressed by a colour and a letter), based on the food's content of energy, sugars, saturated fat, sodium, "fruit, vegetables, and nuts," fibre, and protein
Keyhole	Sweden (2015), Norway (2015), Denmark (2015), Iceland (2015), and Lithuania (2015)	Foods labelled with the Keyhole contain less sugars and salt, more fibre and wholegrain and healthier or less fat than food products of the same type not carrying the symbol
UK MTLs (hybrid scheme)	UK (2013)	Nutrition information (energy, fat, saturated fat, sugars, and salt) in grams and as percentage of daily reference intake. Traffic light colour coding indicating low (green), medium (amber), and high (red) levels of the nutrients stated
Health star rating	Australia and New Zealand (2019)	Points-based scheme that attributes a summary score between 0.5 and 5 stars, from poorest to best nutrient profile
Warning signs	Chile (2012), Uruguay, and Peru (2017)	Warning label on foods high in energy, sugar, sodium, saturated fat, or potentially other nutrients that should be consumed less

FOP, front-of-pack; EU, European Union; MTL, multiple traffic light.

a generally larger effect than variation in physical activity [3, 9, 10]. Therefore, public health efforts include a focus on promoting healthy dietary patterns, including promoting a diet with a modest energy density and a limited dietary intake of saturated fats, salt, sugars, and sugar-containing beverages [11]. The major part of the supply of these less desirable diet components is derived from commercially prepared and marketed foods. In Europe, these foods are labelled with nutrient content tables. However, their impact on consumer choice appears to be limited since it takes considerable time and effort as well as well-informed consumers to use and adequately interpret nutrient content tables [12, 13]. As an alternative measure, simple labels placed on the front-of-packs (FOPs) of food products have been developed with the expectation that they are more effective in improving purchasing behaviour and dietary quality of populations [14]. This is particularly important for families with children and adolescents, as well as for purchases made by children and adolescents who tend to be even more influenced by advertising and packaging appearance [15, 16].

FOP food labels are intended to provide quick orientation on product quality based on nutrient profiles and to a quick decision-making about the relative qualities of

different products through a simple and easily interpretable format [17]. The purpose of FOP nutrition labelling is to provide consumers with additional information on healthy dietary choices and to encourage food providers to offer products with a healthier composition. With this statement, we aim at reviewing FOP labelling options for the European Union (EU).

### Current State

Since 2016, the packaging of all food and drinks sold in the EU must contain a nutrition declaration [18]. European regulations do not impose any obligation to use a simplified and objective indicator on the food industry that would allow easy assessment of the actual nutritional value of products. However, EU countries and the food industry can introduce their own labelling forms. The only restriction is that, according to EU law, the information on the packaging must not be misleading or suggest that the product is healthier than it is in reality.

Voluntary FOP labelling systems are used in 40% (11/27) of EU countries, including Belgium, Croatia, Czech Republic, Denmark, Finland, France, Lithuania,

**Table 2.** Types of labels specific to nutrients

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Numeric, such as numbers expressing a percentage of reference intakes, such as the GDA label developed in 2006 by the food industry [13]
Colour-coded labels, such as the MTL label, which was introduced in the United Kingdom in 2005. One colour coding each is provided for the content of fats, saturated fats, sugars and salt with red indicating a high, amber a moderate, and green a low content [25]
Warning labels, such as the warning symbol (first introduced in 2016 in Chile) if the level of a given nutrient exceeds the value considered to be healthy [26, 27]
A summary label indicating the overall nutritional quality of the product, such as the Nutri-score adopted in France in 2017 and the health star rating system that first appeared on food packaging in Australia in 2014 [28, 29]
In several countries, also symbols for healthier products in a specific food category, based on nutrient values, are used. An example is the choices label introduced in 2000 in The Netherlands and the green keyhole symbol introduced in the 1980s in Sweden and later in Denmark [30, 31]. In the USA and Canada, the guiding star system is popular, in which certain products and entire store aisles are marked with stars based on nutrient density [32]

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GDA, guideline daily amount; MTL, multiple traffic light.

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Poland, Slovenia, Spain, and Sweden, and in some countries of the European region (United Kingdom, Iceland, and Norway) [19]. A mandatory system is used only in Finland. Some countries, for example, Germany have announced the intention to introduce regulations on FOP labelling [20]. Currently, over 30 countries worldwide use FOP labelling (Table 1), but it is mandatory only in a few of them (e.g., Chile, Ecuador, Sri Lanka, and South Korea). Chile was the first country worldwide to implement a FOP warning label, and thereafter, several countries have followed this model [21]. The Ecuadorean labelling of packed food products regulation established the inclusion of a traffic light in the package of processed foods for sale in the country for both domestic and imported food products [22]. In 2016, a traffic light labelling system for beverages was implemented in Sri Lanka [23].

### Types of Front-of-Pack Nutrition Labels

There are considerable inconsistencies and incompatibility of the FOP systems used by different countries. Given the principle of free movement of goods and people within the EU market, a uniform solution would be advantageous to prevent confusion and enable comparison of all food products. Many different types of FOP labels have been developed, including nutrient-specific labels that display information about the content of a particular nutrient and summary labels that provide an assessment of the overall nutritional value.

Labels specific to nutrients can be divided into 5 categories presented in Table 2. FOP nutrition labelling schemes vary in presentation (e.g., shape, colour, and size), type of public health nutrition message (proscriptive, prescriptive, or both), and nutrient focus (e.g., focus on “critical nutrients” or inclusion of both positive and negative nutrients). To date, the most common “critical nutrients” that have been included in FOP nutrition labelling schemes are sodium, total fats, or saturated and trans-fats, and total sugars. Some but not all of the FOP nutrition labelling schemes include certain nutrient-rich components, such as fibre, whole grains, protein, fruits and vegetables, and nuts [33].

Except for numeric nutrient-specific labels, which have an informative character, all other FOP labels involve a certain level of interpretation of nutritional content through the use of colours, graphics, and/or text elements and can be considered as interpretative labels [13].

### Perception and Effectiveness of Front-of-Pack Nutrition Labelling

Multiple studies have demonstrated the helpfulness of FOP nutrition labelling in raising awareness and consumer understanding of the nutritional quality of pre-packaged foods [12, 14–16, 34–39]. In recent years, there has been a significant increase in the number of studies comparing the efficacy of different approaches to labelling. The number of labelling methods compared in each

study is usually small and newer models (such as warning labels or total rating) are underrepresented [13]. However, all schemes improve a consumers' ability to correctly interpret the nutritional quality of food compared to a control situation with no labelling [18, 40].

Studies have shown that FOP nutrition labels have a stronger influence on the ability to identify healthier products than the individual characteristics of consumers. The effect of the Nutri-Score outweighed the differences observed across socio-demographic subgroups, showing its applicability to vulnerable populations [13]. In contrast, understanding numeric and purely informational nutritional labels appears to be linked to the socio-economic and health status of the consumers, and disadvantaged groups with a higher obesity and disease risk are less effectively reached [41].

Global and colour-coded FOP labels effectively attract consumer attention and require less processing time and fewer fixations than nutrition facts labels [42, 43]. Studies on elements of design that more attract consumer attention and influence their purchasing choices have shown that a triangular symbol containing the word "high" on a white background worked better than an octagon with the word "a lot" [44]. It also turns out that there are differences in the perception of positive labelling. Interestingly, the star system seems more polarized in consumer perception than the system of multiple traffic lights [45].

Based on the available research and literature reviews, it seems that the best solution is ample, colour-coded global FOP labels that are easy-to-understand and quickly interpretable by all consumer and allow quick guidance of health-promoting purchasing decisions at the point of sale, regardless of the consumer's socio-economic background [46, 47]. The Nutri-Score fulfils these criteria and was shown to be an effective labelling tool, and it has, therefore, been chosen as the method of FOP labelling in several European countries including Belgium, France, Germany, Luxembourg, Spain, and Switzerland [12, 48].

### Positions of International Organizations

In 2015, WHO recommended governments to introduce easy-to-understand or interpretative FOP labels that help consumers to identify healthier options [49]. Also, the World Cancer Research Fund International recommends that policymakers from around the world should take up the challenge of implementing FOP food labelling [20]. The European Consumer Organization suggests the introduction of a coloured system on the

front of food packaging that limits situations in which confused consumers choose unhealthy products [50]. Moreover, 7 associations affiliated with European Consumer Organization organized a petition for the introduction of the Nutri-Score system on the labelling of all food and drink products in the EU [51]. Also, the American Medical Association believes that food packaging should include more transparent information about the contents within food, so the healthy choice can be the easy choice for consumers [52]. The latest position paper of the Global Federation of International Societies of Paediatric Gastroenterology, Hepatology, and Nutrition also recommends introducing societal standards that protect the health of children and adolescents, which may include easy-to-understand colour-coded FOP labelling of food products [3]. The Commission to The European Parliament and The Council stated that thanks to the potential of FOP schemes to help consumers make health-conscious food choices it seems appropriate to introduce a harmonized mandatory FOP nutrition labelling at EU-level [53].

### Conclusions

We recommend that a consistent, easily interpretable colour-coded FOP food labelling system is introduced as a mandatory labelling requirement for packaged foods marketed in European countries, as one element of a broader obesity prevention strategy. We strongly support the EU-wide mandatory introduction of the Nutri-Score. We are aware of the limitations of this labelling system, which does not cover all food products (e.g., fresh fruits, vegetables, herbs, and spices) and is based on a uniform reference amount rather than on portion sizes, but its universality and comprehensibility significantly outweigh the imperfections.

#### *Statement 1*

European countries should take coordinated action to stop the childhood obesity epidemic. Appropriate labelling of food products with the Nutri-Score can provide an important contribution to increasing awareness of consumers and families, support health-promoting purchasing choices, and improve dietary quality.

#### *Statement 2*

EU authorities should introduce an EU-wide mandatory requirement for colour-coded FOP labelling for packaged foods and beverages.

### Statement 3

FOP labels should be consumer-friendly, interpretative, and easy-to-understand to enable consumers to make health-adequate decisions intuitively and quickly. The FOP labelling system should use simple, standardized symbols and colours that effectively illustrate the nutrition declaration. The Nutri-Score fulfils these requirements was positively evaluated in numerous studies and should be introduced as a mandatory labelling requirement in the EU.

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### Conflict of Interest Statement

The authors have no conflicts of interest to declare.

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### Author Contributions

K.D., Ł.D., and A.M. were the project managers and conceived the manuscript design; D.W., A.H., and B.K. participated in the design of the manuscript and collected data; K.D., Ł.D., J.W., and E.Ł. analyzed the literature; Ł.D. and K.D. drafted the manuscript; J.W., A.M., D.W., E.Ł., A.H., and B.K. revised the content of the manuscript.

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