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Public Health ESDN has the mission of promoting the role of dietitians in Public Health and supporting people to prevent disease through healthy and sustainable food choices across Europe, to support dietitians in developing evidence based practice, tools and research in the field of Public Health Nutrition and Dietetics.

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Executive Summary

The Nutrient Profiling System (NPS) is a scientific method that evaluates the nutritional quality of foods and beverages, categorizing, classifying or ranking them according to their nutritional composition and their impact on health as regards to disease prevention and health promotion. The principal aim of the NPS has been to help consumers identify nutrient-rich foods, make decisions on food purchasing and improve diet quality by encouraging a healthy diet. NP models have a wide variety of public health uses, both educational and regulatory.

As the ability to systematically define healthier food options is a requirement that remains at the top of European public health agenda, NPSs are known to be useful as a tool to improve diets across the world. However, many food companies have developed their own nutritional criteria or nutrient profiles for guiding their product development or to distinguish their healthy options and so have come up with a range of different models, many of which are bespoke to a particular brand portfolio.

This current scenario, with numerous different NP schemes and differing interpretations of NP, may lead to confusion of both the consumer and the policy maker. There is an urgent need to optimize NPs but without drastic changes so that consumers can get used to and accept the healthier options.

Nutrient profiling models could be based on different criteria and approaches depending on their purposes. Food companies seek a model suitable for their marketing and reformulation purposes and which complements their use of logos and symbols. But the most important role should be the regulation of their labelling and advertising information to consumers.

The current use of NPSs, primary for health claims, labelling and food marketing restrictions, is far from the potential that could be realized. To achieve their real potential, the European Commission should define a NP model and its conditions for the use of nutrition and health claims on foods. This model should take into account the quantities of nutrients and other substances present in the food, the role of the food in the diet of the general population or certain risk groups and the presence of nutrients whose health effects have been scientifically recognized.

Given that there are several profiling models with the same purpose currently being implemented, the European Commission (EC) needs to establish "Scientific Opinion on the Optimal Profiling Scheme" which provides the basis to regulate the use of nutritional and health claims with labelling and marketing purposes. The selected NPS would indirectly facilitate food reformulation and regulation of food supply.

A Commission funded project to set up a methodology to propose systems for Europe is needed. Experts in food composition databases and public health nutrition can develop the NPS and also

link with the policy cycle on reformulation, marketing of food, labelling and the use of nutritional and health claims. EFAD should be part of this initiative.

The development of an optimal NPS across Europe could provide a triple win - for consumers, for public health nutrition and for the food industry. This will be achieved if the NPS:

- Is developed with a multi-stakeholder approach
- Covers the whole food supply
- Is produced alongside the establishment of rules to ensure correct and consistent use of nutrition and health claims to prevent misleading information to consumers.
- Promotes continuous, step-by-step dietary changes, which are acceptable to the consumer.

Background

Nutrient Profiling Systems (NPS) is a scientific method that evaluates the nutritional quality of foods and beverages, categorizing, classifying or ranking them according to their nutritional composition and salubrity, that is, depending on their impact on health (relationship to disease prevention and health promotion). The principal aim of the NP approaches has been to help consumers identify nutrient-rich foods, make decisions on food purchasing and improve diet quality by encouraging a healthy diet. NP models have a wide variety of public health uses, both educational and regulatory.¹⁻⁴

There are several circumstances where NP has been used in the past without being described as such. For example, the proposed European Union (EU) regulation on nutrition and health claims has similarities to a NPS, despite the lack of the specific attributes of a real NPs: Regulation EC No 1924/2006, that applies rules to nutrition claims (such as "low fat", "high fibre") and to health claims (such as "Vitamin D is needed for the normal growth and development of bone in children"), to ensure that any claim made on a food's labeling, presentation or advertising in the European Union is clear, accurate and based on scientific evidence, and can't mislead consumers. Whereas the primary goal of the Claims regulation is the protection of consumers from misleading marketing and aims to establish an equal ground for all companies, it also, even though more implicitly, requires a high level of health protection. This flows from the intent of the regulation combined with Article 168 of the Treaty of the Functioning of the European Union. A pillar of the Claims regulation is the condition that foods bearing claims must comply with nutrient profiles. This condition is set out in the regulation's Article 4 and the reasons for this are found in the recitals, which states: "The application of nutrient profiles as a criterion would aim to avoid a situation where nutrition or health claims mask the overall nutritional status of a food product, which could mislead consumers when trying to make healthy choices in the context of a balanced diet".⁴ The use of claims to the regulation of content (low fat, high fibre, etc) seems to be closer to a NPs but the way they are currently being used is missing the link to health. On the other hand, the EU regulation gives targets and it could be seen as an across-the-board system, except there is no study to actually prove that the scoring or outcome are linked to better diet and/or health and there are no references to prove how the targets were created based on guidelines, etc. In this way it is a uniform system but it is not systematic as there is no presentation of the system itself (the approach, the key components, etc).

Another approach of a NPS has been used by the Food Standards Agency (FSA) in the UK to develop and agree a model with associated definitions of "healthier" and "less healthy" foods in relation to the promotion of food to children.⁵

In recent decades, attention has been paid to the increasing contribution of food processing to global food supplies and dietary patterns, although the specific types of processing that modify food attributes and risks of disease – either negatively or positively – have not been precisely defined. *NOVA* is another classification tool that categorizes foods according to the extent and purpose of food processing, rather than in terms of nutrients.⁶ This scheme has provided the first pillar of “categorisation” to the Pan American Health Organization Nutrient Profile System, which is intended to be a tool in the design and implementation of various regulatory strategies related to the prevention and control of obesity/overweight.⁴

Thus, it’s important to distinguish the several approaches to NPS used both in the past and nowadays, and the real NPS, which have specific attributes:

- It either creates categories or studies the food supply as a whole;
- It studies nutrients and maybe ingredients;
- It scores nutrients either comparatively to other foods or guidelines;
- It draws conclusions on their ability to be part of a healthy diet;
- It proves the link to better diet and health.

Over the last 25 years, governments, food manufacturers, public health authorities and other stakeholders have developed more than 100 different Nutrient Profiling Systems, that are used to inform a variety of policy, regulatory, and educational applications, including product reformulation, labeling and claims regulations, restrictions on marketing to children, restrictions on point of sale promotions and food procurement.^{4,5}

As the ability to systematically define healthier food options is a requirement that remains at the top of European public health agenda, NPS are known to be useful as a tool to improve diets across the world.⁷ However, many food companies have developed their own nutritional criteria or nutrient profiles for guiding their product development or to distinguish their healthy options and so have come up with a range of different models, many of which are suited to a particular brand portfolio.⁷

The WHO published its nutritional profile model in February 2015, which was originally designed to eliminate the marketing of certain foods and drinks to children (HFSS foods - high in fat, sugar or salt). In Europe the food industry has also developed a model for the same purpose: the EU Pledge.^{2,4} More recently France selected the Nutri-Score system, a straightforward labelling system that uses colour codes to guide consumers at a glance on the nutritional value of food products, after comparison tests against several labels proposed by industry or retailers in March 2017. The Nutri-Score system (also known in its former version as the 5-Colour Nutrition label, 5-CNL) relies on the computations of a nutrient profiling system, derived from the UK Food Standards Agency model (FSA Score) and classifies foods and beverages according to five

categories of nutritional quality, indicated via a colour scale ranging from Green (grade A) to red (grade E).^{8,9}

This scenario, with numerous different NP schemes, is preventing the effective evaluation of the nutritional quality of different foods and drinks which then influences a number of other issues which affect public health nutrition including:

- Establishment of clear nutritional labeling schemes;
- Regulation of the use of nutritional and health claims;
- Decision making by policymakers regarding the application of taxes to food and beverages;
- Reformulation of food products to improve the nutritional quality;
- Difficulties for consumers, because of the inconsistencies, when it comes to making responsible decisions about their health;
- Educational vehicle for the consumers.

Problem Statement

The exponential growth of different schemes and currently differing interpretations of NP may lead to confusion of both the consumer and the policy maker.

Health and consumer groups have called for a single scheme - NP Model - consistent with international recommendations for preventing chronic diseases and with national food-based dietary guidelines that could be applied to all products and with a clearly defined cut-off for defining which foods and drinks are not suitable for advertising to children or those that can bear a nutrition or health claim.^{2, 5, 10, 11}

Thus, an EC position is urgently needed to establish a set of guiding principles for European NPS. This will ensure that national authorities can use, effectively and appropriately, the NPS and thus provide a triple win - for the consumers, for the industry and for public health.¹

Objectives

To study the potential use of different Nutrient Profiling Models (Table 1), the guiding principles behind their development and the tools required to implement them, identify their limitations and practicability, and to compare some of the most popular Nutrient Profiling Models, in order to provide recommendations for the harmonization, with the necessary national or regional adaptations, of a European Nutrient Profiling Model.

Current examples of the potential use of NP Models

Table 1. Potential purposes of the NPS

Purposes	Potential use
Food marketing	For several decades, consumer groups and public health organizations have called for bans on the advertising of “unhealthy” food to children, although the definition of “unhealthy” remains a topic of considerable argument. Food companies have gradually developed a number of different schemes which define products they believe are least “healthy” and appropriate for advertising to children. The most commonly used one is EU Pledge, which is a voluntary initiative by leading companies to change food and beverages advertising to children under the age of twelve on platforms like TV, print, digital and trade, permitting the advertisement of only those, which meet specific nutrition criteria (White paper). ^{11, 12}
Nutrition claims	EC Regulation 1924/2006 aims to ensure a high level of consumer protection, provide them with the information they need to make their choices in full knowledge of the facts, and create a level playing field in the food industry. ¹⁰ European Commission should define the nutrient profiles and conditions for the use of nutrition and health claims on foods. NP is possible to use for providing objective information about nutrient contents of packaged food in order to help healthier choices made by the consumers. ^{4, 13, 14, 15}
Improve food literacy	Allows consumer to identify healthier food options by the use of logos, symbols or labelling schemes (front of pack systems). ¹⁶ Inadequate food literacy has been depicted as a causal factor of negative consumer behaviours within the food system. In particular, it has been associated with unwillingness to promote a positive change in attitudes and perceptions towards food, poor ability to deal with food-related information, confusion in selecting and consuming food.
Regulation of food supply	Worldwide, government bodies increasingly recognize the importance of using objective methods for distinguishing between different foods according to their nutritional quality for policy and regulatory purposes. Nutrient profiling fits this purpose, through the implementation of educational and restrictive measures, in order to decrease access and exposure to unhealthy foods, as for instance in schools (guidelines for food provision and for effective educational initiatives about healthy eating, in the school environment); in public institutions and recreation facilities (guidelines for increasing access to healthy foods and reduce the exposure to those considered unhealthy); and in social programs (guidelines for food provided to vulnerable population groups, preventing the distribution of HFSS). ¹⁶

Food reformulation	NP guides reformulation by the food industry. Several studies showed that food and beverage reformulation, guided by a NP system, may be effective in improving population nutritional intakes and thereby its health status. In order to achieve its potential and modify the food environment in a beneficial manner, reformulation should be implemented by the entire food sector, with multi-stakeholder partnerships, including governments, food industry, retailers and consumer associations. ¹⁶
Agriculture	Subsidies to certain foods are part of the food policies that aim to facilitate the consumption of fresh and low processed foods, as opposed to other ultra-processed ones that can have adverse effects on health when they are consumed in excess or displace others with a healthier value. NP models can make it easier for policy makers to select food candidates for subsidies or taxes - evaluation and reexamination of farm subsidies. ³

Future directions of the potential use of NP Models

Theoretically, the Food quality index could allow the systematization of foods that provide the dietary recommendations, and also combinations of foods that provide suitable levels of nutrients and energy required for optimum health, not only through nutrient evaluation of individual foods, but also of multiple foods in the context of meals and total diets. ^{17, 18}

But the scientific community has not reached an agreement about Food quality index, because NP studies foods and not diets, so diet scoring and the study of multiple foods as one is not an NP according to the definition. Maybe the scoring of meals is the frontier of NP?

Regarding agriculture, NPS could be potentially used for the development of products from animal sources (especially dairy) and also as part of the common agriculture policy to identify the steps after production.

Guiding principles to implement Nutrient Profiling Models

In order to define nutrient profiles of foods, various types of information are needed, such as: rules based on scientific knowledge to assign foods to different groups; nutritional endpoints (e.g. DRI's); food-based dietary guidelines; dietary surveys, including the data of generally consumed serving sizes and food composition databases (preferably with branded products). ⁵

As it may not be possible to design one system that can equally address all purposes, some technical questions need to be considered: the purpose of the model (claims eligibility, advertising ...) and for whom is the purpose relevant (at a population level); methods for integrating criteria (to choose/ exclude nutrients or other food components and respective cut-points, according to

scientific and pragmatic principles); techniques for establishing the type of system (“category specific”, “across-the-board”, or combined); processes for establishing the reference amount for the model (e.g. per 100 g, per 100 kcal, or per serving) and the type of the outputs (threshold, score, or both).^{5, 16, 17}

The implementation of a successful nutrient profiling application requires political willingness and commitment, engagement from stakeholders that may involve a consultation period, or an advisory board with stakeholder representation. Support from dietitians-nutritionists and from academics in nutrition science can help in the promotion of the application.¹

Nutrient Profiling systems also need a systematic effort to validate their accuracy and usefulness to the consumer, sense validity as a general term meaning accuracy (does the nutrient profiling method measure what it is intended to measure?). Because of the lack of a gold standard for defining a healthy food, some authors defend that validation methods might be better referred to as “calibration”, as it is only a way to test that our system works in a good way and there are no errors made. The true validation links to diet and health (so some modelling activities on the diet level may be seen as validations).^{1, 19, 20}

Limitations of Nutrient Profiling

NP is not a panacea; it cannot solve all problems in relation to diet and health. The nutrient composition of an individual food does not determine the profile of the overall diet or food pattern.^{1, 7}

NP is concerned primarily with nutrients and the energy content of foods, and it rarely includes substances that are not nutrients, but may be considered alongside nutrients (e.g. phytochemicals) and does not encompass other substances such as pathogens, contaminants and food additives which may affect the health of some, particularly vulnerable, people.⁷

NP also does not embrace other concerns people have about food (e.g. ethical, religious and environmental concerns)^{1, 7} and cannot change the eating habits of consumers (e.g. excessive amount of consumed portion, if NP is based on serving size and use that to regulate single serves), although on-pack portion guidance and the featuring of nutrition information by portion can help them in consuming the recommended serving in coherence with national dietary guidelines.

One of the main criticisms concerning nutrient profiling schemes is that there are healthy and less healthy foods, but there are also healthy and less healthy diets. Technically, to define the role of a food in a diet, we assign a score as to how likely is a food to be part of a healthy diet. This is the reason some authors think it may be more appropriate to try to derive a validation method from available data about healthy diets and not only from the opinion of experts on single foods.¹⁷

Practicability of Nutrient Profiling Systems

To better understand and compare the characteristics and purposes of the high numbers of NPS, it would be necessary to have an up-to-date and accessible resource summarizing existing NPS and their key principles developed worldwide: WHO European Regional nutrient profile model; EU Pledge, from food industry; Nutritional profile model of the Pan American Health Organization (PAHO); Institute of Medicine process to develop a front of pack labelling system; Choices Program; NUTRI SCORE; others...

At this point there is no database like this, although European Food Information Resources (EUROFIR) and Mintel (a market intelligence agency) are working on proposals.^{21, 22}

This resource would be highly valuable for assisting public health actors (e.g. health, nutrition and dietetics professionals, policy makers) in the selection of a model that is appropriate for the use it is intended (e.g. application in food labelling vs. regulation of health and nutrition claims vs. taxation) and also to identify models that could be adapted for a specific purpose instead of undertaking the creation of a new model, and allow easy comparison of the components and construct of different models. This resource would also help to identify gaps that need to be addressed in the area of nutrient profiling, such as the potential lack of demonstrated validity for many of the existing models.²³

Comparing Nutrient Profile Models

As a contribution to the resource that summarizes the existing NP models developed worldwide, we prepared a table which compares two main - WHO Model and PAHO Model - NPS in order to compare them (Table 2). Since they're both nutrient thresholds based, we will also present a model based on scoring algorithms, the Food Standards Agency (FSA) NP Model.

The comparison items were selected based on their utility to assist public health actors, mainly public health dietitians-nutritionists, in their work, as presented bellow.^{5, 20, 23}

- **Origin:** Organization (name and type) which developed the model; Country where the model was developed; Year of introduction or of seminal publication.
- **Type of system:** Across-the-board system (integrate data from more than one nutrient or food component to produce a single overall score or categorization); Category-based system or Nutrient Specific System (a model that has separate sets of criteria for different nutrients and/or food components); Combined systems.
- **Base:** Nutrients and other food components included (largely guided by those nutrients/food components considered of largest concern) and also foods exempted or excluded; Number of

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product categories - if the scheme applies across the board or just to a selection of foods/drinks or categories thereof; if it contains positive and negative components or only one of them, negative (e.g. total fat, SFA, TFA, cholesterol, Na, sugars, energy) or positive (e.g. vitamins/folic acid, minerals, protein, fiber, long chain fatty acids, fruit and vegetables, fish, energy).

- Applicability: Applicability of NP system, including the measurement criteria and how to evaluate it (as for example, PAHO criteria are so strict for some categories, that the ready to eat product is inedible for the current population with the current taste preferences).
- Principal Application / Other Application: Food labelling; regulation of health and nutrition claims; food taxation; food subsidies; standards for food advertising or marketing; food certification schemes/front-of-pack labelling; food reformulation; food procurement regulations/food quality standards for public institutions (e.g. schools, workplaces, hospitals, armed services, prisons, elderly care homes).
- Target population for NP models: Which specifically have the restriction of the marketing of less healthy foods and beverages to children as a possible application, the “target age range of the children” is now extracted.
- Reference amount: Typical reference points are per 100 g or ml, per 100 kJ or kcal, or per portion/ serving.
- Outputs: If outputs are Score, Definition(s), or both. When outputs are definitions, there must be a list of definitions (e.g. “eligible to make health claim”).
- Validation/ Calibration: If model was tested and validated. How the method was tested and validated (Expert judgments; Consumption surveys; Modeling or simulation techniques; Analytical epidemiological studies; Overall assessment of methods for testing nutrient profiling schemes).

Table 2. Comparison between WHO and PAHO Nutrient Profiling Models

	WHO European Regional NPS ^{2, 5, 24}	PAHO NPS ^{3, 18, 25}
Origin	<p>Year: 2015</p> <p>Developed by the WHO Regional Office for Europe with a mandate from the European Food and Nutrition Action Plan 2015-2020, this model was based on two existing models: the Norwegian and the Danish. The rationale for selecting those models was that they are based on food categories, which is considered easier to adapt or modify than models based on scoring system.</p>	<p>Year: 2015</p> <p>Developed by the PAHO, this model was based on all of the updated evidence, including the WHO Population Nutrient Intake Goals (PNIG) to Prevent Obesity and Related NCDs and the WHO guidelines on sugar and other nutrients. The PNIGs were formulated after careful review of all updated evidence relating critical nutrient intake to public health outcomes.</p>
Type	<p>Category-specific model: applies food categories and nutrient thresholds for key nutrients of public health concern to limit.</p>	<p>Limited to processed and ultra processed products, which typically contain elevated amounts of critical nutrients added by the manufacturer.</p>
Base	<p>17 Food categories, with some sub-categories, but with a list that is not exhaustive and may be added to when used nationally.</p> <p>The model focuses on energy-dense, highly processed foods and beverages that are high in saturated fats, <i>trans</i> fats, free sugars and/or salt (“HFSS foods”). Further indication of which food products fall within these categories is provided by using international customs tariff codes.</p> <p>Nutrient thresholds for the model includes: Total fat; Saturated fat and essential or trans fatty acids; Total sugar; Salt; Energy (included for category 9 - ready meals, convenience foods and composite dishes); Non-sugar sweeteners (included for category 4 - specifically subcategories; 4b Milk drinks and 4d Other beverages).</p>	<p>Classify processed and ultra processed food and drink with high energy content and poor nutritional value.</p> <p>Exempted or excluded products:</p> <ul style="list-style-type: none"> - Unprocessed or minimally processed foods - Foods and beverages for special uses, such as “breast milk substitutes” and food supplements - Alcoholic drinks <p>Nutrient thresholds for the model includes critical nutrients (CN): Total fat; Saturated fat; Trans-fatty acids; Free sugars; “Other sweeteners”; Salt</p>
Validation	<p>Yes, through a two-stage process: technical meeting with external experts and Member State representatives; pilot-testing of the draft model with a group of countries from across the European Region.</p>	<p>Yes, based on scientific evidence, on exhaustive examination of food labels or equivalent sources of information and as the result of its alignment with the WHO PNIGs, under expert judgments.</p>

	Per 100 g/ ml basis	Per calories basis
Ref. Amount		
Cut-of Points	<p>Depending on the categories.</p> <ul style="list-style-type: none"> - 2,5 to 20,0 g of total fat / 100 g - 2,0 to 20,0 of saturated fat / 100g - 10,0 to 15,0 g of total sugars / 100 g - Any amount of added sugars - Any amount of non-sugar sweeteners - 0,1 to 1,7 g of salt / 100 g - 225 Kcal / 100 g of category 9 	<p>Identifies processed and ultra-processed products excessive in CN.</p> <ul style="list-style-type: none"> - 30% of total energy from total fat - 10% of total energy from saturated fat - 1% of total energy from trans fat - 10% of total energy from free sugars - Any amount of other sweeteners - 1 mg of sodium per 1 kcal
Target Population	Children	General population
Main application	<ul style="list-style-type: none"> - Restricting the marketing of foods to children. - It is meant as a common tool for use or adaptation by Member States across Europe (on a voluntary basis and taking into account national circumstances). 	<ul style="list-style-type: none"> - Multiple applications in order to create environments conducive to healthy eating. - It is meant as a tool for design and implementation of regulatory strategies, including fiscal policies, related to the prevention and control of overweight.
Other Applications	<ul style="list-style-type: none"> - Product reformulation. - Evaluate the impact of policies and the extent to which initiatives are effective at reducing children's overall exposure to HFSS foods. 	<ul style="list-style-type: none"> - Establishment of restrictions on the marketing/promotion of unhealthy food and beverages to children. - Regulation of school food environments (feeding programs, food sold in schools). - Use of front-of-package (FOP) labels. - Definition of taxation policies. - Assessment of agricultural subsidies. - Identification of foods to be provided by social programs to vulnerable groups.
Outputs / Applicability	<p>Marketing is prohibited if the product contains > 1 g per 100 g total fat in the form of industrially-produced <i>trans</i> fatty acids, or ≥ 0.5% of total energy in the form of alcohol.</p> <p>In line with WHO nutrition guidelines, marketing for five categories is never permitted, meaning</p>	<p>Use of the PAHO NP Model requires mandatory labeling of prepackaged foods that includes the following:</p> <ul style="list-style-type: none"> - Declaration of nutrient content for energy, sodium, total sugars, total fat, saturated fat, and trans fat, and - A list of all ingredients in the product including

that no nutrient criteria are required:

- 1) Chocolate and sugar confectionery, energy bars, and sweet toppings and desserts;
- 2) Cakes, sweet biscuits and pastries; other sweet bakery wares, and dry mixes for making such;
- 3) Juices;
- 4) Energy drinks;
- 5) Edible ices.

The same applies to the two food categories for which marketing is always permitted:

- 1) Fresh and frozen meat, poultry, fish, and similar;
- 2) Fresh and frozen fruit, vegetables and legumes.

non-sugar sweeteners.

In most countries, mandate nutrient lists on packaged foods and regulate health/ nutrition requirement claims on packaging. Following the PAHO/WHO Trans Fat-Free Americas initiative and the Rio de Janeiro Declaration, several countries began regulating trans fats.

National, sub national, and local policies that require the use of PHAO NP model are implemented through a mandatory legal norm.

There are several examples of regulatory experiences in various countries: school food environments are being modified through programs that subsidize fruits and vegetables, the banning of vending machines and the setting of FAO/ WHO standards for school-based nutrition/food programs and other programs for institutional settings as hospitals, prisons, children's day care, etc.

FSA / Ofcom model ^{20, 25}

Example of a method for categorizing /ranking products based on scoring algorithms. The nutrient profiling model was developed by the Food Standards Agency (FSA) in 2004-2005 to provide Ofcom, the broadcast regulator, with a tool to differentiate of foods on the basis of their nutritional composition, in the context of television advertising foods to children.

The model uses a simple scoring system where points are allocated on the basis of the nutrient content of 100g of a food or drink. Points are awarded for 'A' nutrients (energy, saturated fat, total sugar and sodium), and for 'C' nutrients (fruit, vegetables and nut content, fiber and protein). The score for 'C' nutrients is then subtracted from the score for 'A' nutrients to give the final nutrient profile score. Foods scoring 4 or more points, and drinks scoring 1 or more points, are classified as 'less healthy' and are subject to Ofcom's controls on the advertising of foods to children on TV. The model applies equally to all food and drink and doesn't distinguish between free sugars and intrinsic sugars; there are no exemptions or category-specific criteria, which initiates several arguments, as the role and character of the different food and beverages categories are so different from each other, furthermore the frequency of consumption of a given category also has to be taken into account for the sake of real public health impact.

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Points	0	1	2	...	10
Energy (kJ)	≤335	≤670	≤1005	...	>3350
Sat fat (g)	≤1.0	≤2.0	≤3.0	...	>10.0
Total sugar (g)	≤4.5	≤9	≤13.5	...	>45.0
					5
Sodium (mg)	≤90	≤180	≤270	...	>900
Protein (g) *	≤1.6	>1.6	>3.2	...	>8.0
Fiber (NSP) (g)	≤0.7	>0.7	>1.4	...	>3.5
Fruit, Veg & Nuts (g)	≤40	>40	>60	...	>80

For both food and drinks: scores are based on the content of nutrient in 100g.

*If food scores 11 for protein, fiber and F&V, then scores 0 for protein except if scores 5 for FV&N

Score Classification	Healthy/Intermediate	Unhealthy
Food	3 or less points	4 or more points
Drink	0 points	1 or more points

Options

We don't have enough evidence to establish the link between NPS, healthy food, healthy diets and general health, but we know that improving the nutrient density of food products through reformulation is one approach to improve diet quality and to reduce the prevalence of non-communicable diseases (NCDs).²³ Also, we know that NPS are a feasible way of improving the nutrient density of food products and diet quality and to put order in the use of claims.

Since there are more than 100 different NPS, and more to come, we are not sure if we're going on the right way. Therefore, we all agree there's an urgent need of harmonization NPS, although without drastic changes that could not give space to consumers to get used to the different taste and as a result they could turn to a less healthy option.

We have to differentiate between the purposes of the profiling models as different criteria and approach are applied for the different purposes, and that all the related actors seem to seek a model to solve their concrete purpose (marketing, reformulation, use of logos, etc.). But the most important seems to be the regulation of the information consumers receives - labelling and advertising.

NP is possible to use for providing objective information about nutrient contents of packaged food in order to help healthier choices made by the consumers, as it allows a definition of eligibility criteria for nutrition claims, food labelling and marketing: use of logos or warning symbols on the front of the packaging and bearing nutritional and health claims.^{4, 13, 14, 15}

Analysis of Options

EC Regulation 1924/2006 aims to ensure a high level of consumer protection, provide them with the information they need to make their choices in full knowledge of the facts, and create a level playing field in the food industry.¹⁰ In order to understand how health claims and symbols (clymbol) on food labels affect purchase and consumption behaviour, CLYMBOL, a European Commission-funded research project running from 2012 to 2016, mapped the prevalence of symbolic and non-symbolic nutrition and health-related claims (NHC) on foods and non-alcoholic beverages in five European countries. A total of 2034 foods and drinks were sampled and packaging information was analyzed and although the prevalence of NHC varies across European countries and between different food categories, the results provided a baseline data for policy makers and the food industry to monitor and evaluate the use of claims on food packaging: at least one claim was identified for 26% of all products sampled and 6% of these claims were symbolic; the majority of the claims were nutrition claims (64%), followed by health claims (29%) and health-related ingredient claims (6%); the most common health claims were nutrient and other function claims (47%), followed by disease risk reduction claims (5%).¹⁵

The current use of NPS, primary for health claims, labelling and food marketing restrictions, is far from the potential that can be realized. To achieve the real potential of NPS, the European Commission should define the nutrient profile and conditions for the use of nutrition and health claims on foods, taking into account: the quantities of nutrients and other substances present in the food; the role of food in the diet of the general population or certain risk groups; and the presence of nutrients whose health effects have been scientifically recognized.

Although we are aware that the use of NPS for labelling and advertising has economic (mostly for the industry) and political costs (namely to policy makers and public health legislators), we consider that health gains should be monitored and evaluated in order to prove that health benefits will offset both economical and political costs.

Recommendation

Given that there are several examples for profiling models based on food categories with the same purpose currently being implemented by a wide range of actors and taking advantage of the society awareness on its necessity, European Commission (EC) needs for an European "Scientific Opinion to establish a Harmonized Profiling Scheme" which provides the basis to regulate the use of nutritional and health claims with labelling and marketing purpose, which indirectly would facilitate food reformulation too.

A Commission funded project on harmonisation of NPS is needed in order to collect food data and set up a methodology to compare systems and use dietary surveys wherever available to propose systems for Europe. There is a need of a group of experts in food composition databases and public health that can work on it and also link with the policy cycle on reformulation, marketing of food, labelling, use of nutritional and health claims, etc., and we believe EFAD should be part of these initiatives.

The harmonized NP Scheme could have exception and some flexibility to give the opportunity to member states for preserving those country-specific factors related with their context of food consumption, health status or traditional foods.

We believe that the harmonization of NPS will allow us to finally use them, at least in Europe and therefore will provide a triple win - for the consumers, for the industry and for public health. This triple win can be achieved if:

- The NP is developed in a multi-stakeholder approach;
- The whole food supply is covered under the chosen NP;
- The NPS helps establishing rules to a properly use of nutrition and health claims to turn it reliable preventing the display of misleading information to consumers.
- The NP promotes continuous, step-by-step change, so it could be applied.

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