



Hot Topics in Public Health

Nutrient Profile Models - What should we know?

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Background

– Nutrient Profiling (NP) is a scientific method that evaluates the nutritional quality of foods and beverages, categorizing or ranking them according to their nutritional composition and salubrity

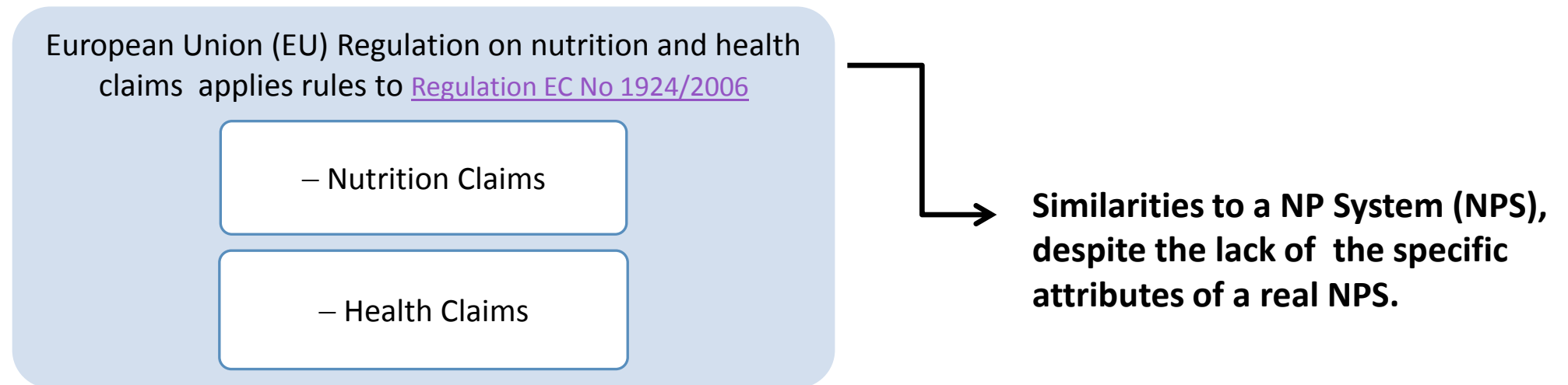
→ **Depending on their impact on health.**

– This method allows an ease identification of foods and drinks that should or should not be encouraged in a healthy diet.

– NP models have a wide variety of public health uses, both educational and regulatory.

Background

- There are several circumstances where NP has been used in the past without being described as such



Background



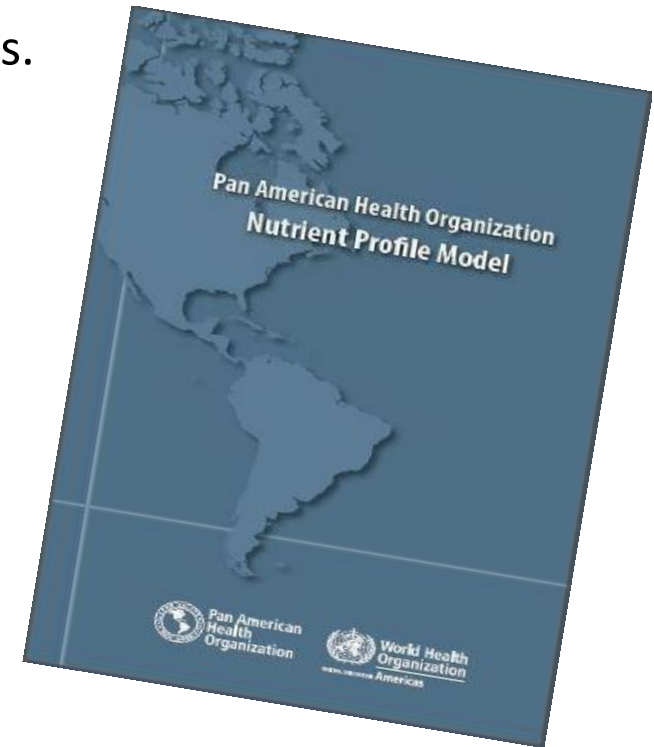
A pillar of the Claims regulation is the condition that foods bearing claims must comply with nutrient profiles → Regulation's Article 4:

*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...*

Background

Another example of a classification tool is **NOVA** → Categorizes foods according to the extent and purpose of food processing, rather than in terms of nutrients.

This scheme has provided the first pillar of “categorisation” to the **Pan American Health Organization Nutrient Profile System.**



Specific attributes of NPS

It either creates categories or studies the food supply as a whole;

It studies nutrients and maybe ingredients;

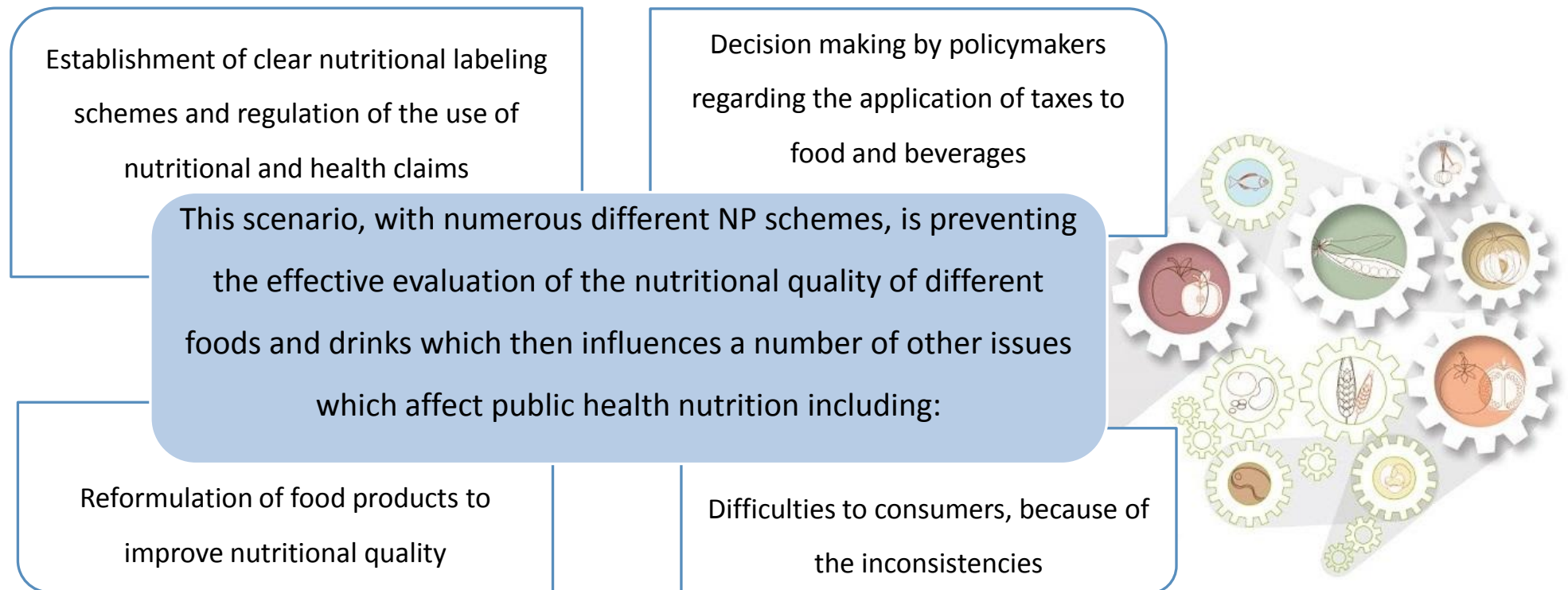
It scores nutrients either comparatively to other foods or the guidelines;

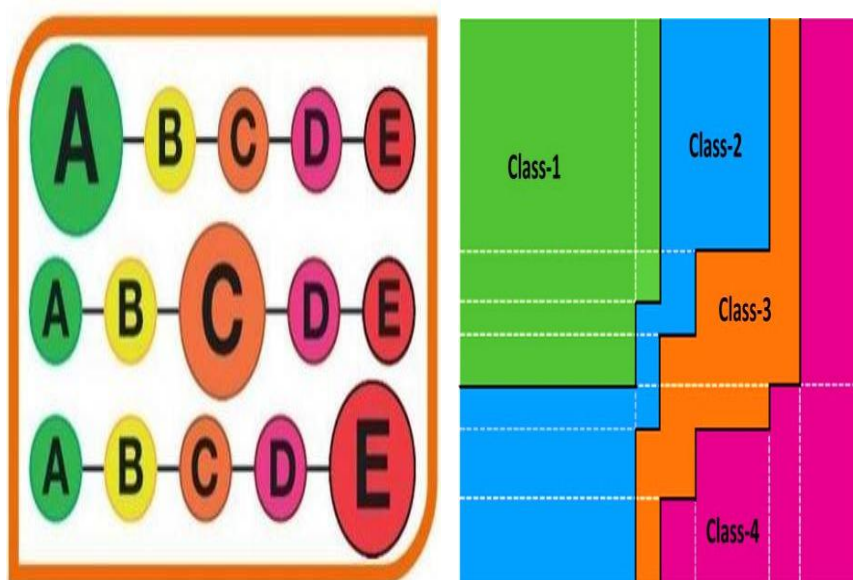
It draws conclusions on their ability to be part of a healthy diet;

It proves the link to better diet and health.

From the theoretical rationale to the Problem Statement

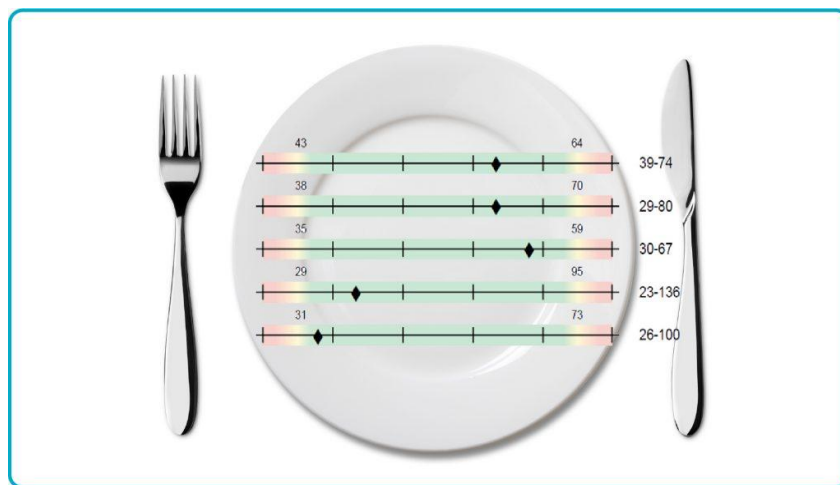
- Over the last 25 years, more than 100 different NPS were developed...





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 makers.**
- Health and consumer groups have called for a single scheme - **NP Model** - consistent with international recommendations for preventing chronic disease and with national food-based dietary guidelines.
- Thus, an **European Commission Position is urgently needed to establish a set of guiding principles for a European NPS.** This will ensure that national authorities can use, effectively and appropriately, the NPS.



Objectives



Study Nutrient Profiling Models:

- the potential use of different NPS
- future directions
- their limitations and practicability.

In order to... Provide recommendations for the harmonization of a European Nutrient Profiling Model.

Current examples of the potential use of NP Models

Food marketing

Nutrition claims

Improve Food literacy

Regulation of food supply

Food reformulation

Agriculture

Nutrient Profiling Models



Future directions of the potential use of NP Models

Nutrient Profiling Models

Theoretical, the Food quality index could allow the systematization of foods that provide the dietary recommendations. But the scientific community has not reached an agreement about Food quality index, because NP studies foods and not diets.

Regarding agriculture, NPS could be potentially use for the fabrication of products from animal sources and also as part of the common agriculture policy to identify the steps after production.



Limitations of NP Models

NP is not a panacea; it cannot solve all problems in relation to diet and health

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

NP also does not embrace other concerns people have about food (e.g. ethical, religious and environmental concerns) and cannot change the eating habits of consumers

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 an healthy diet. But besides healthy and less healthy foods, there are also healthy and less healthy diets.

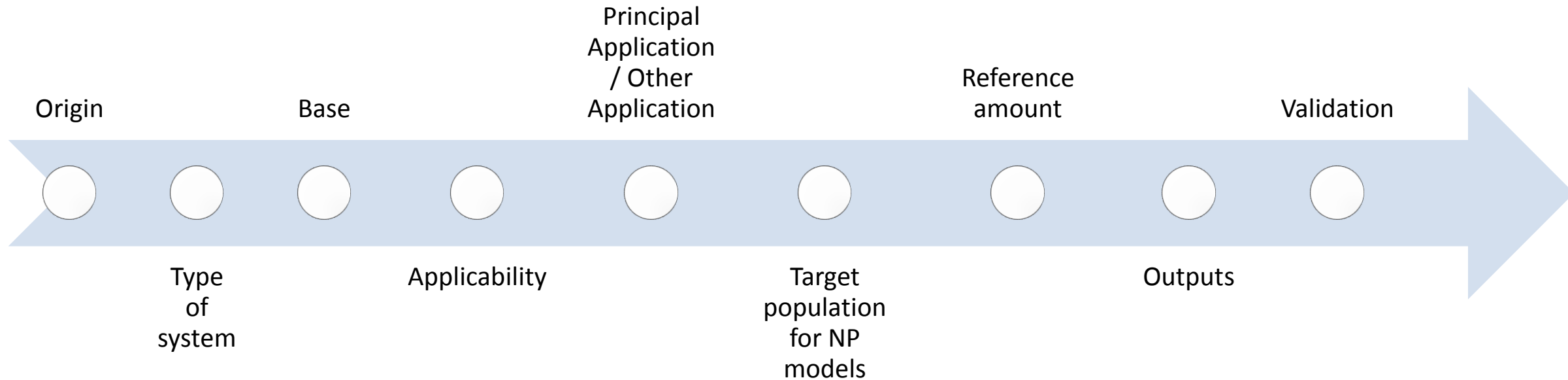
Practicability of Nutrient Profiling Systems



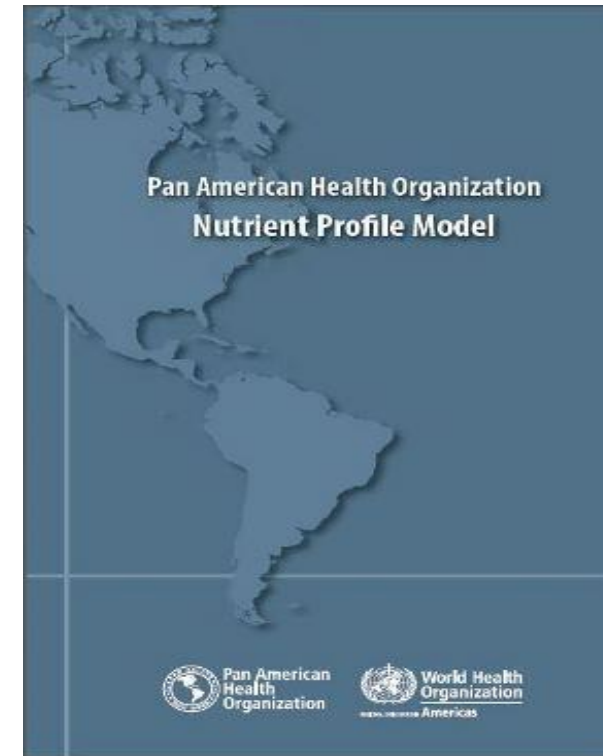
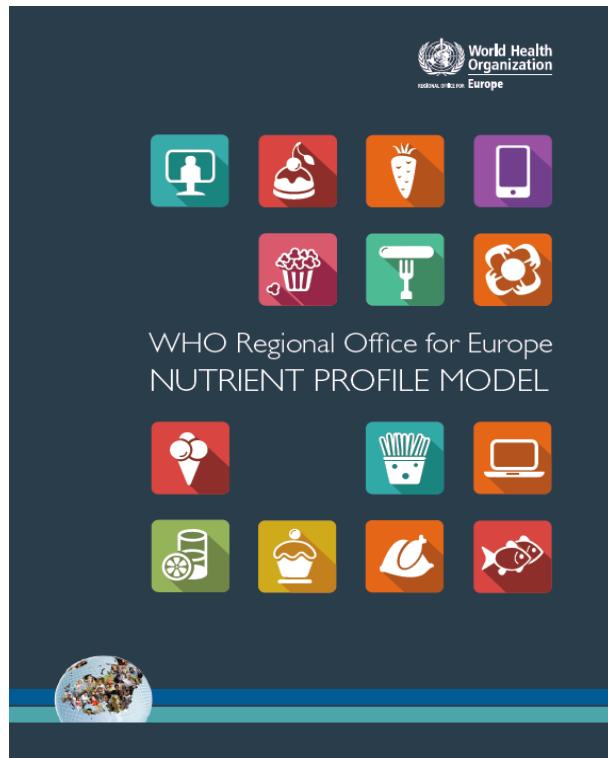
To better understand and compare the characteristics and purposes of the high numbers of NPS, it would be necessary an up-to-date and accessible resource summarizing existing NPS and their key principles developed worldwide. This resource would be highly valuable:

- for assisting public health actors 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);
- to identify models that can be adapted for a certain purpose, instead of new creations;
- to help on the identification of 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;
- to allow easy comparison of the components and construct of different models

Comparing Nutrient Profiling Models



Comparing Nutrient Profiling Models



Models	WHO European Regional NPS	PAHO NPS
Origin	Based on two existing models: the Norwegian and the Danish.	Based on all of the updated evidence to Prevent Obesity and Related NCDs and the WHO guidelines on sugar and other nutrients
Type	Category-specific model.	Limited to processed and ultra processed products.
Base	17 Food categories, with some sub-categories, but with a list that is not exhaustive and may be added to when used nationally.	Classify processed and ultra processed food and drink with high energy content and poor nutritional value.
Validation	Yes, through a two-stage process: technical meeting with external experts and pilot-testing of the draft model with a group of countries.	Yes, based on scientific evidence.

Models	WHO European Regional NPS	PAHO NPS
Target	Children	General population
Ref. Amount	Per 100 g/ ml basis	Per calories basis
Cut-of Points	Depending on the categories (e.g. 2,5-20,0 g of total fat ; 2,0-20,0 of saturated fat; 10,0-15,0 g of total sugars ; 0,1-1,7 g of salt; 225 Kcal / 100 g ...)	Identifies processed and ultra-processed products excessive in critical nutrients (e.g. 30% of total energy from total fat; 1% from trans fat; 1 mg of sodium per 1 kcal...)
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 <u>a voluntary basis</u> 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 <u>regulatory strategies</u>, including fiscal policies, related to the prevention and control of overweight.

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).

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.

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, advertising).

Analysis of Options

Recommendations

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, 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.

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.

Recommendations

The harmonization of NPS 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 health claims and turn it reliable, in order to solve problems with health claims in certain foods like cereals and yogurts;
- The NP promotes continuous, step-by-step change, so it could be applied.



Recommendations

- 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.,
- We believe **EFAD should be part of these initiatives.**

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References

1. World Health Organization (WHO) and International Association for the Study of Obesity (IASO). Nutrient profiling: Report of a WHO/ IASO technical meeting, United Kingdom 4-6 October, 2010.
2. Jewell J. et al. Addressing the challenge of food marketing to children: the WHO regional office for Europe nutrient profile model as a common tool. 2015; Volume 1, 205-268.
3. Pan American Health Organization (PAHO). Nutritional profile model of the PAHO. Washington, DC: OPAS. 2016.
4. European Heart Network. Nutrient profiles and nutrition and health claims - a European Heart Network paper. 2015.
5. Scarborough P. et al. Developing nutrient profile models: a systematic approach. Public Health Nutrition. 2016; 10(4), 330–336.
6. Monteiro C. et al. NOVA. The star shines bright. Food classification. Public Health World Nutrition. 2016; Volume 7, Nº 1-3: 28-38.
7. European Commission. Institute for Health and Consumer Protection I.2 – Public Health Policy Support. Comparison of the Nutrient Profiling schemes of the EU Pledge and the World Health Organization Regional Office for Europe. 2015
8. Julia C., Etilé F., Hercberg S. Front-of-pack Nutri-Score labelling in France: an evidence based policy. The Lancet /public-health. 2018; Vol 3.
9. Julia C. et al. Promoting public health in nutrition: Nutri-Score and the tug of war between public health and the food industry. European Journal of Public Health. 2018; 1– 2.
10. Scarborough P. et al. How important is the choice of the nutrient profile model used to regulate broadcast advertising of foods to children? A comparison using a targeted data set. European Journal of Clinical Nutrition. 2013; 67, 815–820
11. EU Pledge Nutrition White Paper – Updated July 2015. Available: www.eu-pledge.eu/content/eu-pledge-nutrition-criteria
12. Regulation (UE) nº 1924/2006. Available: <http://eurlex.europa.eu/legalcontent/EN/ALL/?uri=CELEX%3A02006R1924-20121129>
13. Dikmen D. et al. Testing two nutrient profiling models of labeled foods and beverages marketed in Turkey. Cent Europe J Public Health. 2015; 23 (2): 155–160
14. Roodenburg A. et al. Development of international criteria for a front of package food labelling system: the International Choices Programme. European Journal of Clinical Nutrition. 2011; 65, 1190–1200.

References

15. Rayner M. et al. Prevalence of Nutrition and Health-Related Claims on Pre-Packaged Foods: A Five-Country Study in Europe. *Nutrients*. 2016; 8, 137.
16. Combet E. et al. Testing the Capacity of Multi-Nutrient Profiling System to Guide Food and Beverage Reformulation: Results from 5 National Food Composition Databases. *Nutrients*. 2017; 9, 406.
17. Fundación Iberoamericana de Nutrición (FINUT). Nutrient Profiling: Scientific aims *versus* actual impact on public health. Scientific-technical report. 2017, Spanish edition.
18. Fern E. et al. The Nutrient Balance Concept: A New Quality Metric for Composite Meals and Diets. *PLoS ONE*. 2015; 10 (7): e0130491.
19. Rayner M. et al. Validating a nutrient profile model. *Public Health Nutrition*. 2017; 11(4), 371– 378.
20. UK Gov. Department of Health. Nutrient Profiling Technical Guidance. 2011.
21. Reinivuo H., Bell S. and Ovaskainen M.L. Harmonisation of recipe calculation procedures in European food composition databases. *Journal of Food Composition and Analysis*. 2009; 22(5), 410-413.
22. *Mintel* Global Food & Drink Trends 2018. Available: <http://www.mintel.com/mintel-food-drink>
23. Labonte M. et al. Systematic review of nutrient profile models developed for nutrition-related policies and regulations aimed at noncommunicable disease prevention. 2015. Available: www.crd.york.ac.uk/PROSPERO/display_record.asp?ID=CRD42015024750
24. WHO Regional Office for Europe. Nutrient Profile Model. 2015
25. Pan American Health Organization. Consumption of ultra-processed food and drink products in Latin America: trends, impact on obesity, and policy implications. Washington: OPAS; 2015.
26. Rayner M. et al. Nutrient profiling for regulatory purposes. 2017. Available: www.ncbi.nlm.nih.gov/pubmed/28595658
27. Vlassopoulos A, et al. A nutrient profiling system for the reformulation of a global food and beverage portfolio. *Eur J Nutr*. 2017;56(3):1105-1122