Nutrient Profile Models

EFAD's Fact Sheets*

What is Nutrient Profiling?

Nutrient Profiling is defined as the science of categorizing, classifying, or ranking nutritional quality of foods and beverages according to their nutritional composition and impact on health. The primary goal of Nutrient Profiling has been to improve the diet quality in society, namely by helping consumers to make conscious and informed decisions on food purchasing, regarding to the nutritional quality (1).

Nutrient standards must be based on regulatory values and dietary guidance from authoritative organizations (1-3). Each Nutrient Profile Model scores food items for the presence of beneficial food attributes, food groups to encourage and/or disadvantageous components (3).

How many Nutrient Profile Models there are?

More than 100 different Nutrient Profile Models (e.g. WHO Model, PAHO model, and FSA Model) have been developed with different purposes by governments, academics, food industry and other organizations. However, at the moment, there is no international or scientifical consensus about one particular model to be adopted universally (1).

Common atributes

While far from uniform, Nutrient Profile Models do share several common attributes. Nutrient Profile Models can be based on nutrients to limit only, beneficial nutrients to encourage or some combination of both. Nutrients to encourage typically include protein, fibre and a variety of vitamins and minerals (3). Likewise, nutrients to limit are very similar as well and usually include total or saturated fat, cholesterol, trans fatty acids, total, added, or free sugar, and sodium (3,4). In addition to that, the reference amount normally used are per 100 g or ml, per 100 kJ or kcal, or per portion (3, 4).

Why is Nutrient Profiling important?

Nutrients have an important role in the prevention of noncommunicable diseases (5). Therefore, the current dietary guidelines worldwide have become more focused on the observed links between diet and multiple health outcomes (3).
Nutrient Profile Models have been developed for many uses such as educational, regulatory and policy purposes (1,3,5). For instance, these Models can be used to regulate nutrition and health claims on food and to provide objective information about nutrient contents of packaged foods in order to help consumers make healthier choices (1).

Primary applications (1)

Food labelling, nutrition and health claims and guidelines

Regulation of food availability in public settings such as schools, and health facilities

Restrictions on the marketing of food products to children

Food assistance programs and surveillance

Food literacy and consumer education

Food and beverages taxation

Reformulation by food industry

Food subsidies

It is worth highlighting that most models consider beneficial nutrients to encourage, which is consistent with the aim of encouraging nutrient-dense foods in public settings instead of simply discouraging nutrient-poor alternatives (4).

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What are the main problems of Nutrient Profile Models?

Most models are based mainly in the nutrient quantity and it rarely includes other substances such us pathogens, contaminants, and additives or other concerns about food habits or degree of food processing (1).

Many models include only a few food categories, which limits their sensitivity (6). On the other hand, including too many categories could lead to two oppositive effects: manipulate food categories for preferable treatment; or incentive to reformulation (2, 4).

In some cases, there are great disparities between the outcomes of different models. These divergences are partly because some models consider only positive nutrients, even though they are high in one or more negative nutrients (7).

Nutrient profiling, as its own, cannot change the eating habits of consumers (1).

The contribution of whole grains is limited to the food's fibre content, despite considerable evidence linking higher whole grain consumption with improved health outcomes. Using only fibre to represent whole grains is not consistent with the global dietary guidance, which encourages both fibre and whole grains (3).

Only a few Nutrient Profile Models were found to have undergone validation (1,2,4). Additionally, validation method should derive from available data about healthy diets and not only from single foods.

The permanent develop of different models may lead to confusion and mislead interpretations (1).

Nutrient composition of an individual food or beverage does not determinate the overall diet quality (1).

EFAD's Policy Paper on Nutrient Profiling (1)

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

The current use of Nutrient Profile Models, 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 single model and its conditions for the use of nutrition and health claims on foods. This model should consider the quantities of nutrients and other substances present in the food, the role of the food in the diet and the presence of nutrients whose health effects have been scientifically recognized. The Farm to Fork Strategy of the European Commission contemplates to implement a Nutrient Profile Model by 2022.

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