



Invited Commentary

Promotion of the traditional Greek diet in children to enable healthy diets in a nutrition-sensitive way

In this issue of *Public Health Nutrition*, Kastorini and colleagues provide an overview of the methodological approach adopted for developing the National Dietary Guidelines of Greece (NDGGr) with a specific focus on the group of age of 1–18 years⁽¹⁾. The paper by Kastorini *et al.* describes the process of developing food-based nutritional and physical activity recommendations for promoting healthy dietary habits in Greek infants, children and adolescents.

Food-based dietary guidelines (FBDG) are an important source of information and guidance for consumers and producers. They provide recommendations based on the latest evidence of the composition of healthy diets adapted to national contexts, representing also a helpful source of information for policy makers in several sectors, including promotion of investment towards healthier and a more diverse range of products⁽²⁾.

The NDGGr as described in Kastorini *et al.*'s paper constitute science-based policy recommendations in the form of guidelines for healthy eating for children. They are intended primarily for consumer information and education and, as such, they follow practical criteria of appropriateness and cultural acceptability adapted to the Greek context. The development of the NDGGr needed an effort of consistency in order to make the recommendations easily understandable and memorable. In general, updating FBDG consists in the integration of scientific knowledge about nutrients, foods and health in order to identify dietary patterns that facilitate the achievement of desirable food and nutrient intakes, improve nutritional outcomes and prevent non-communicable chronic diseases.

Global dietary patterns have been changing rapidly in recent decades. With globalization, urbanization and income growth, people are experiencing new food environments, expanding their food choices and diversifying their dietary patterns in both positive and negative directions. Analysing the worldwide trends of adherence to the Mediterranean diet in 1961–1965 and 2000–2003, da Silva and co-workers⁽³⁾ observed that many countries in the Mediterranean basin are drifting away from the Mediterranean dietary pattern, with Greece experiencing the greatest decrease of the Mediterranean Adequacy Index. In the development of the NDGGr, a set of nutrition policy effort actions was proposed to tackle dietary

westernization and preserve the healthy Mediterranean dietary pattern. The dietary shift of Mediterranean-basin countries has had an important effect on nutritional outcomes, in particular considering the prevalence of overweight and obesity in children which is higher in Italy⁽⁴⁾, Greece⁽⁵⁾ and Spain⁽⁶⁾ than in other EU countries.

In other words, in EU countries we presently have reverse conditions than those found by Ancel Keys in his famous Seven Countries Study⁽⁷⁾ with some Northern EU countries (e.g. Denmark, Netherlands, Norway) having better nutritional indicators than Mediterranean countries⁽⁶⁾.

The NDGGr provide practical recommendations with indicative serving sizes for consumption expressed either as food items or food groups for children and adolescents to create menus based on the traditional Greek diet. This is a key point of the development of nutritional recommendations in the context of food systems to promote food choices leading to healthy diets. In fact, acceptability of nutritional recommendations can be influenced by the promotion of specific foods and diets as well as by consumer preferences and traditions. Food affordability, convenience and desirability are influenced not only by the quality and the marketing around food, but also by the social norms and the cultural values associated with food. Food and nutrition considered not only in terms of biological effects but also in the cultural and symbolic sense is strongly in line with the objective of the UN Decade of Action on Nutrition (2016–2025) proclaimed in April 2016⁽⁸⁾. The Nutrition Decade recognizes the emergence of local, national, regional and global movements to end all forms of malnutrition, that include overweight and obesity, and seeks to provide a framework in which governments and their partners adopt and implement policies and programmes to create sustainable food systems and enabling environments that promote healthy dietary practices. In this light dietary recommendations should take into consideration in their design also issues of systemic inequalities and resource access. The ultimate objective of the Nutrition Decade is to support fulfilment of the Second International Conference of Nutrition commitments⁽⁹⁾ and achievement of the Global Nutrition and diet-related Noncommunicable Diseases targets by 2025⁽¹⁰⁾, as well as to contribute to the achievement of the Sustainable Development Goals by 2030⁽¹¹⁾.



Food group frequencies and portion size as defined in the NDGGr for children are based on WHO recommendations for healthy diets, especially in terms of limitation of added sugar, control in red meat consumption and avoidance of processed meat. These aspects are strongly in line with traditional Mediterranean diet concepts which have recently been reconsidered by Willett and colleagues⁽¹²⁾, who define healthy diets as those having an appropriate energy intake and consisting of a diversity of plant-based foods, low amounts of animal-source foods, unsaturated rather than saturated fats, and small amounts of refined grains, highly processed foods and added sugars.

According to the FAO⁽¹³⁾, worldwide more than 100 countries have developed or are currently developing FBDG, with many revised at least once, under the responsibility of duly appointed national expert committees. In the past decade, several countries have started to incorporate sustainability considerations into their food policies and consumer education programmes. Given the policy and programmatic implications of FBDG, the development and integration of recommendations that promote specific food practices and choices has been an obvious strategy for addressing sustainability, mainly in its nutrition and environment dimensions. Such recommendations include, for example, having a mostly plant-based diet, focus on seasonal and local foods, reduction of food waste, consumption of fish from sustainable stocks, reduction of red meat, and avoidance of processed meat, highly processed foods and sugar-sweetened beverages. A few countries, namely Sweden, Brazil and the Netherlands, have now included these aspects into their FBDG. The NDGGr appear to be less oriented in the sense of sustainability. To be noted, the Italian revision of guidelines for healthy nutrition that should be issued in 2019 will have a chapter dedicated to these aspects. Greek as well as Italian FBDG are based on Mediterranean diet principles, a model that has gained fame and honour, being the model that combines prevention of non-communicable diseases, longevity and health with consumer acceptability and sustainability of the production systems⁽¹⁴⁾.

Current food systems need to be reshaped to provide quality products able to sustain optimal health. Coherent action and innovative food system solutions are needed to ensure access to sustainable, balanced and healthy diets for all. The quality and sustainability of food systems are central in delivering healthy diets to populations and, through them, their social, economic and environmental sustainability. A food system approach – from production to processing, storage, transportation, marketing, retailing and consumption – is thus important to promote healthy, sustainable diets and improve nutrition as isolated interventions have a limited impact⁽¹²⁾. Nutritional guidelines should be developed taking into account actions for sustainable food systems that promote healthy diets combined with national policies and investments to integrate nutrition objectives into agricultural policies and food production⁽¹⁵⁾.

An important aspect of the NDGGr for children is the development of an age-specific Nutrition Wheel and examples of 'Healthy Meals' with illustrations of recommendations related to optimal frequency and serving sizes of main meals, based on the traditional Greek diet. According to the European Food Safety Authority⁽¹⁶⁾, graphical representations of FBDG may be developed in order to facilitate communication to consumers, promote and disseminate the recommendations, and increase their understanding. Various formats have been used in different countries and are easily available in articles, books or websites. Examples of graphic formats are the food pyramid, food plate, food circle, food boat, and many others. There is no rule to define the best graphical formats for a given population; however, they would require adaptations to the country and would need a scientific validation.

Data on the impact of national FBDG are still limited, as very few countries conduct regular monitoring and evaluation of related programmes and policies. Experience from countries which have already developed FBDG shows that the existence of FBDG is not always followed by the necessary compliance by consumers and awareness of policy makers and nutritional educators. Therefore, having FBDG alone is not effective in managing or preventing diet-related health issues⁽¹⁶⁾.

Measurements of impact would require time and resources, especially for long- and medium-term indicators such as changes in dietary habits or health outcomes. On the other hand, short-term indicators that include changes in knowledge and attitudes of the population, health professionals, decision makers and the food industry relative to the dietary guidelines could be evaluated at least in a sub-sample of the population or in definite settings⁽¹³⁾.

In conclusion, the NDGGr for Infants, Children and Adolescents represents an interesting example of development of a tool for promoting healthy eating habits in a vulnerable age group, also in consideration of the fact that interventions at an early stage of development have better efficacy in later age and multiplicative effects on adults. However, a mechanism for impact evaluation of educative tools based on nutritional guidelines should be put in place.

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