Preparation and use of food-based dietary guidelines

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The International Conference on Nutrition (ICN), convened by FAO and the World Health Organization (WHO) in Rome in 1992, identified strategies and actions for improving nutritional well-being and food consumption throughout the world. The Plan of Action for Nutrition adopted during the ICN includes a section entitled “Promoting appropriate diets and healthy lifestyles”. Governments are called upon “to provide advice to the public by disseminating, through use of mass media and other appropriate means, qualitative and/or quantitative dietary guidelines relevant for different age groups and lifestyles and appropriate for the country’s population” (FAO/WHO, 1992). Attaining this goal will require that each nation formulate a plan of action appropriate to its culture, identify public health problems and trends related to local dietary patterns and adopt local strategies for their resolution. The ICN Plan of Action for Nutrition is notable for the absence of numerical targets for food and nutrient intakes. This omission indicates broader thinking among nutritionists, moving away from policies dictated by nutrient recommendations towards policies defined by prevailing public health issues.

Pursuing these goals and strategies, FAO and WHO jointly convened an international consultation of 22 experts to discuss the preparation and use of food-based dietary guidelines. The experts, meeting in Nicosia, Cyprus, from 2 to 7 March 1995, reviewed scientific evidence on diet-related health problems including non-communicable diseases and other forms of malnutrition. They reviewed the literature on recommended nutrient intakes and synthesized current nutrient recommendations as well. They discussed dietary assessment methodologies and examined existing national dietary guidelines and their use. Finally, they made recommendations for the development and implementation of food-based dietary guidelines.

HIGHLIGHTS

Many countries have dietary guidelines expressed in scientific terms, containing quantitative goals and recommendations for intakes of nutrients and food components. These references, which include recommended dietary allowances (RDAs), reference nutrient intakes (RNIs) and dietary reference values (DRVs), are used by policymakers and health professionals. However, such recommendations are commonly misunderstood and applied inappropriately by both nutritionists and the public. The problem is twofold: individuals do not know their true nutrient requirements, and their information about the actual nutrient content of the foods they eat is incomplete.

Food-based dietary guidelines (FBDGs) are intended to provide nutrition education and dietary guidance for the general public in terms that are understandable to most consumers. FBDGs are a practical means of assisting people to reach appropriate nutritional goals. They take into account customary dietary patterns and indicate modifications needed to address particular concerns. They should be appropriate for each population group and may thus vary among population groups.

UNDERLYING ASSUMPTIONS FOR FOOD-BASED DIETARY GUIDELINES

There are a number of reasons for developing FBDGs. First, diets are made of foods, which are more than mere collections of nutrients. Unlike nutrients, foods and diets have cultural, ethnic, social and family meanings, which can be incorporated into FBDGs. Second, the biological functions of food components and their health effects have not all been identified. If the focus is on a single nutrient, the benefits of consuming these compounds in foods may not be realized. Third, the combination of nutrients in various foods can have different metabolic effects. Fourth, methods of food processing and preparation influence the nutritional value of foods. Finally, there is good evidence from animal, clinical and epidemiological studies that specific dietary patterns are associated with reduced risk of specific diseases, and FBDGs can encourage such practices.

Scientific basis

FBDGs should be based on sound scientific principles derived from studies in food science, behaviour, communication and agriculture, as well as nutrition. This information is combined with knowledge of local
Dissemination of scientific materials and promotional activities by concerned groups can stimulate and encourage the establishment of a national working group.

Diet-related health patterns, diseases and mortality
The working group identifies the nutrition- and diet-related problems of public health significance, estimates the magnitude of the problems and establishes priorities. Segments of the population that are at risk of diet-related diseases are identified and information from various local, regional and international sources should be reviewed. Epidemiological, clinical and experimental studies can help to define the role of specific foods and nutrients in disease development and prevention.

The adequacy of diets can be assessed with reference to various food indices, RNIs or the nutrient density of foods consumed. In addition, it is important to determine whether an identified public health problem is being confounded by the presence or absence of certain nutrients or other food components. However, FBDGs are intended to help individuals consume diets that can alleviate health problems, not solely to close a gap between estimated and recommended nutrient intakes. Where such a gap exists and is identified as a cause for public health problems, the FBDGs should be based on objectives that are realistic for the given socio-economic context and time frame.

Assessing food consumption patterns
Food consumption data can be collected at three levels by different methods; the data from each level have specific purposes and strengths and limitations. National food supply data provide gross estimates of food availability and show trends; however, they do not reflect food consumption and cannot identify population subgroups at risk of inadequate intake. Household data are useful for comparing food availability among subgroups, although they do not provide information about individual consumption. The rapid assessment procedure involves focus group interviews with selected target groups; it is a low-cost and useful way to gather information on food beliefs, behaviour and intake at community level.

Data about individuals are the most useful for assessing dietary adequacy. Food records, 24-hour recall, food frequency questionnaires, diet histories and food habit questionnaires may be used to gather information on individual food patterns. Each method has its strengths, specific applications and limitations, and accuracy may be improved by combining methods. Selection of the most appropriate data collection method is based on the objectives of the assessment, the foods or nutrients of

conditions. An understanding of what nutrients do and approximately how much of each may be needed must underlie the process of formulating dietary guidelines. Although knowledge of nutrition is incomplete, understanding of energy balance and macro- and micronutrients is sufficient to establish reasonable guidelines. A discussion of nutrition science is beyond the scope of this article; however, some key points are illustrated in the box above.

DEVELOPING FOOD-BASED DIETARY GUIDELINES
FBDGs should be developed by an interdisciplinary group including workers in agriculture, health, education, communication and food and nutrition science as well as representatives of the food industry and consumers. The initiative to develop such guidelines comes from policymakers or practitioners in agriculture or health.

KEY PRINCIPLES FOR DEVELOPING FOOD-BASED DIETARY GUIDELINES

Dietary patterns
- Total diet, rather than nutrients or individual foods, should be addressed.
- Dietary guidelines need to reflect food patterns rather than numerical nutrient goals.
- Various dietary patterns can be consistent with good health.

Practicality
- The recommended foods or food groups should be affordable, widely available and accessible to most people.
- FBDGs should recognize the social, economic, agricultural and environmental conditions affecting foods and eating patterns.
- FBDGs should be flexible for use by people with different lifestyles as well as people of different ages and different physiological conditions.

Comprehensibility
- FBDGs should be easily understood by the general public, taking into account levels of literacy. The terminology used must be simple and must refer to foods, rather than nutrients, wherever possible.
- Food groups that make sense to the public should be chosen.
- Visual presentation must be easily understood.
- Testing of the FBDGs is essential before dissemination.

Cultural acceptability
- The choice of foods and colours used in illustrations should be culturally appropriate.
- The guidelines should be sensitive to religious and other cultural considerations, especially those of minority groups.
- FBDGs should not recommend radical changes in current dietary practices.
- Presentation should use appropriate language or dialect.
- FBDGs should be positive and should encourage enjoyment of appropriate diets.
primary interest, the need for group versus individual data, the level of specificity needed for describing a food and population characteristics.

Analysis of the data should determine the extent to which health problems are diet related and which food consumption behaviour needs to be changed via FBDGs. This analysis will enable the working group to define the content, purpose and target group for the guidelines. The experts discussed possible criteria for analysis, such as individual foods, food groups, meal patterns and eating practices. Computer software programs are available for analysis of food and nutrient data as well as for conversion of food intake data into nutrient values. In analysing the data, national and/or regional food composition data should be consulted.

### National policies and programmes

FBDGs should be consistent with national policies and programmes for improved food supplies and nutrition. The establishment of FBDGs thus requires consideration of issues such as the availability and price of foods. Agricultural policies and their effect on income, food prices, women, labour demand, nutrient content of food and the role of traditional food production systems should be taken into account. Health policies and practices that influence health such as physical activity, smoking and alcohol consumption should also be noted. Attention should be given to the realities of the environment and to food safety concerns such as safeguarding the integrity of national food systems. Education and social policies that promote appropriate dietary intake and lifestyles should also receive consideration.

### Drafting guidelines

FBDGs should be tested before they are published for the general public. Focus groups can help to determine the guidelines’ cultural acceptability and clarity and the appropriateness of their visual presentation. Different guidelines may be needed for urban and rural populations, special population groups (e.g. lactating women) and speakers of various local languages. The scope of the work, resources and objectives will determine the priority of issues to be addressed.

### Implementing food-based dietary guidelines

To be effective, a set of dietary guidelines must be communicated to the public through a variety of educational and motivational media. In addition to being scientifically sound, it is important that the guidelines be short, simple, clear and memorable.

### Educational materials

FBDGs are commonly disseminated as brochures, posters or radio or television messages. An FBDG statement per se can be seen as an educational tool. However, it is often necessary to revise the statements in the FBDGs for different...
consumers, according to educational levels, access to media, dietary practices and existing misconceptions and taboos about food.

Educational materials and programmes can be developed to support FBDGs. These materials give explanations and elaborate on the content, giving more specific information regarding, for example, serving size, traditional foods, and packaged and brand-name versus home-produced foods. They present information about the role of food fortification, functional foods (foods with health benefits extending beyond their nutritional effects), imported foods, mixed diets and different cooking styles and preparations. Guidelines can be produced in different languages and dialects. Various dishes and local foods can be illustrated.

In the preparation of educational materials all stakeholders should be represented to maximize the reach and quality of the materials. Industry representatives, religious and community leaders, dieticians, health care workers, consumer representatives, teachers, extensionists and others should participate in their conception.

A multimedia approach is encouraged. The message is reinforced and more effective when communicated by different media and by spokespersons in different settings. Regional and national mass media educational campaigns should ensure coordinated and consistent dissemination of educational messages. Education should allow for supervision and for feedback to learners. In group education, lesson plans should be developed. A curriculum element for FBDGs and related learning activities in schools may be required prior to the use of public radio or television. It is important to consider the time available for teaching about FBDGs as well as the learners’ attention span and retention of knowledge. If a specific curriculum element for FBDGs in schools is planned, each lesson should build on the previous ones so that understanding of the concepts will increase gradually. Most educational programmes require teacher training or “training of trainers” preparatory programmes to ensure proper implementation and instruction of FBDGs. Training of trainers should be planned from the outset of the programme of implementing FBDGs.

**Monitoring and evaluation**

Mass media campaigns and educational programmes for promotion and adoption of FBDGs need to be evaluated for determination of their reach, frequency and impact. The experts briefly discussed process evaluation, i.e. assessment of how FBDGs and related educational messages were disseminated or implemented, as well as outcome evaluation, i.e. assessment of the results of the campaign or educational programme at its completion.

**REFERENCES**


Numeric nutrient recommendations such as recommended dietary allowances, reference nutrient intakes and dietary reference values are often misunderstood by the public. Food-based dietary guidelines (FBDGs) are a practical means of assisting individuals to reach nutritional goals. In 1995, FAO and the World Health Organization (WHO) held the Expert Consultation on the Preparation and Use of Food-Based Dietary Guidelines in Nicosia, Cyprus. The experts recommended that FBDGs address particular nutritional concerns and consider customary dietary patterns, socio-economic and cultural factors and the biological and physical environment in which the population lives. FBDGs should be consistent with relevant national policies and programmes for improved food supplies and nutrition.

Public health issues should determine the direction of dietary guidelines. FBDGs should combine knowledge of local conditions with sound principles derived from the disciplines of nutrition, education, agriculture, food science and technology, environmental science, behavioural science and social science.

As general principles for developing FBDGs, the experts recommended that total diet rather than individual foods be addressed. FBDGs must be practical; the recommended foods or food groups have to be affordable, widely available and accessible to most people. Guidelines ought to be flexible for different age groups, lifestyles and physiological conditions. Radical changes in current dietary practices should not be recommended. The guidelines should be positive and should encourage enjoyment of food. FBDGs must be easy to understand, and the food groupings have to make sense to the public. Food-based terminology should be used wherever possible, and the number of concepts listed should be few.

It is recommended that industry representatives, religious and community leaders, dieticians, health care workers, consumer representatives, teachers, extension workers and others be encouraged to participate in the development of educational materials on FBDGs to maximize their quality and dissemination. Multimedia approaches to education about FBDGs are encouraged. The effectiveness of mass media campaigns and educational programmes should be evaluated to determine reach, frequency and impact.

Les recommandations nutritionnelles numériques, telles que les apports alimentaires recommandés, les apports nutritionnels de référence et les valeurs alimentaires référentielles, sont souvent mal comprises par le grand public. Les directives alimentaires constituent le moyen pratique d’aider les individus à atteindre des objectifs nutritionnels donnés. En 1995, la FAO et l’Organisation mondiale de la santé (OMS) ont tenu à Nicosie (Chypre) une consultation d’experts sur la préparation et l’application de directives sur les régimes alimentaires. Les experts ont recommandé que ces directives traitent des problèmes nutritionnels spécifiques et tiennent compte à la fois des modes d’alimentation habituels, des facteurs socioéconomiques et culturels, et de l’environnement biologique et physique de la population. La compatibilité des directives alimentaires avec les politiques et programmes nationaux pertinents est nécessaire pour des approvisionnements alimentaires plus appropriés et une meilleure nutrition.

Les questions de santé publique devraient déterminer l’orientation des directives alimentaires, qui devraient à leur tour associer la connaissance des conditions locales à de solides principes issus des règles de la nutrition, de l’éducation, de l’agriculture, des sciences des aliments et de la technologie alimentaire, de la science de l’environnement, de la science du comportement et des sciences sociales.

Comme principes généraux pour l’élaboration de ces directives, les experts ont recommandé de traiter l’alimentation dans sa totalité plutôt que les aliments pris isolément. Il est opportun que ces directives aient un caractère pratique et que les aliments ou groupes d’aliments recommandés soient abordables, disponibles en abondance et accessibles à la majorité de la population. Elles devraient être adaptables pour des groupes d’âge, des modes de vie et des conditions psychologiques différents. Il ne s’agit pas de recommander une modification radicale des pratiques alimentaires courantes. Les directives devraient être positives et encourager à prendre plaisir à la nourriture. Elles devraient être faciles à comprendre et il est opportun, en outre, que les combinaisons alimentaires aient un sens pour le grand public. Il convient d’adopter une terminologie à caractère alimentaire autant que faire se peut et de limiter le nombre des concepts énumérés.

Il s’agit d’encourager la participation des représentants du monde industriel, des autorités religieuses...
Las recomendaciones cuantitativas sobre nutrientes, como los aportes dietéticos, las ingestas de nutrientes de referencia y los valores dietéticos de referencia suelen ser difíciles de comprender por el público. Las directrices dietéticas basadas en alimentos son el medio más práctico para ayudar a las personas a alcanzar objetivos nutricionales. En 1995, la FAO y la OMS celebraron en Nicosia (Chipre) una consulta de expertos sobre «Preparación y aplicación de directrices dietéticas basadas en alimentos». Los expertos recomendaron que estas directrices incorporen determinadas preocupaciones nutricionales, y tengan en cuenta los modelos habituales de alimentación, los factores socioeconómicos y culturales y el entorno biológico y físico en el que vive la población. Las directrices deben ser compatibles con las políticas y programas nacionales encaminados a mejorar el suministro de alimentos y la nutrición.

Las cuestiones de salud pública deben determinar la orientación de las directrices dietéticas, las cuales han de combinar el conocimiento de las condiciones locales con principios sólidos derivados de las disciplinas de la nutrición, la educación, la agricultura, la bromatología, la tecnología de los alimentos y las ciencias ambientales, comportamentales y sociales.

Como principio general para elaborar directrices dietéticas basadas en alimentos, los expertos recomendaron que se tomara como base la alimentación total, y no los distintos alimentos. Es necesario que las directrices sean prácticas y que los alimentos o grupos de alimentos recomendados sean asequibles y accesibles para casi toda la población y estén ampliamente disponibles. Las directrices han de ser flexibles para los diferentes grupos de edad, estilos de vida y condiciones fisiológicas. No deben recomendarse cambios radicales en las prácticas alimentarias habituales. Las directrices deben ser positivas y fomentar el goce de los alimentos. Es necesario que sean fáciles de entender y que las agrupaciones de alimentos tengan sentido para el público. Siempre que sea posible se utilizará una terminología basada en los alimentos y se reducirá el número de conceptos enumerados.

Deberá alentarse a representantes de la industria, dirigentes religiosos y comunitarios, dietistas, personal sanitario, representantes de los consumidores, profesores, extensionistas y otras personas a que participen en la preparación de material didáctico para promover la calidad y divulgación de directrices dietéticas basadas en alimentos. Se recomienda el empleo de medios audiovisuales para difundir las directrices. Deberá evaluarse la eficacia de las campañas y programas de educación a través de los medios de comunicación con el fin de determinar su alcance, frecuencia e impacto.