

Dr Trichopoulou also presented the Mediterranean diet and the corresponding food guide in a pyramid shape (see Annex 5). She briefly mentioned the importance of preserving the knowledge and use of traditional foods, noting that the Department of Hygiene and Epidemiology in the University of Athens Medical School has started studying the traditional foods of Greece.

Points raised in the discussion

- In more than one country, one or more national organizations/institutes work on developing FBDG or food composition tables. It is more effective if they unite their efforts.
- A major challenge is to develop clear and sensible nutrition messages that can be readily adopted by the public.

3.7 Food and dietary data needed for the preparation of food-based dietary guidelines

Dr Antonia Trichopoulou, University of Athens Medical School

The presentation refers to the report Monitoring public health nutrition in Europe (European Union Report, 2003). Definition of indicators of health should be consistent across member states. Indicators should be defined for food and nutrient intake, including breast feeding; nutritional status, anthropometry and physical activity.

To define the food and nutrient intake, the European Union uses the following indicators:

- consumption/availability of vegetables (excluding potatoes and vegetable juice)
- consumption/availability of fruit (excluding fruit juice)
- consumption/availability of meat and meat products
- consumption/availability of fish
- saturated fatty acid content of the typical diet
- polyunsaturated fatty acid content of the typical diet
- mono-unsaturated fatty acid content of the typical diet
- non-starch polysaccharides content of the typical diet

- vitamin content of the typical diet: vitamins C, D and E, folate and carotenoids
- mineral content of the typical diet: Fe, I, Ca and Se.

For nutritional status:

- serum carotenoid levels
- blood lipid pattern
- haemoglobin, serum ferritin
- serum transferrin receptor
- folic acid status
- selenium status
- serum 25-hydroxy vitamin D3.

The following sources can be used for the collection of nutritional data.

Level	Source	Type of data
Population	Food Balance Sheets (FBS)	Ecological: large units
Household	Household budget surveys (HBS)	Ecological: small units
Individual	Nutrition surveys (INS)	Analytical: individuals

The Data Food Networking (DAFNE) initiative of the European Union was launched with the objective of developing a regularly updated European databank of comparable food and socioeconomic information, as a tool for monitoring trends in food habits in Europe. Initially, 16 European countries participated and there are another five new European Union countries. Standard procedures have been identified for data collection.

Household budget survey (HBS) data on food availability at household level, as well as relevant demographic and socioeconomic characteristics are forwarded to the Greek centre coordinating the Data Food Networking (DAFNE) initiative. Central combination and post-harmonization of the raw HBS data are undertaken according to procedures developed in the DAFNE project.

The DAFNE data on mean food availability (g or ml/person/day) are integrated in DafneSoft (v 2.1), which is window-environment software

allowing the presentation of dietary data in various formats (tables, bars, pie-charts, map presentations) and at various levels of detail. The software also makes possible the follow-up of trends in food availability over time, within and between countries; the study of the effect of the household's locality and of the education and occupation of the household head on the daily food choices, and the export of data for further uses.

Future plans of the DAFNE initiative include:

- integrating data from Albania, Bulgaria and Croatia in the DAFNE databank
- developing an approach to evaluate the effect of meals taken out of home;
- finalizing the DAFNE Food Composition Table;
- conducting a dietary survey in a sub-sample of the HBS population, in order to develop conversion factors (meals taken out of home, pregnancy, supplements).

In conclusion, the comparability of operational measures is crucial to the meaningful interpretation of comparisons among countries. This has been a key objective of the DAFNE initiative. A system allowing the regular update of the DAFNE database and the expansion of the network to embrace all European countries could provide a ready source of data for monitoring public health nutrition in Europe at reasonable cost.

The DAFNE-Software (DafneSoft v2.0) can be downloaded free of cost at: www.nut.uoa.gr

3.8 Health and nutrition information needed for the preparation of food-based dietary guidelines

Dr Kraisid Tontisirin, FAO Headquarters

The overall goal of FBDG is to promote nutritional well-being, to prevent diet-related diseases and to provide guidance for food, agriculture and education policy. As FBDG aim to have an impact on people's behaviour, they need to take into consideration the in-country situation, the epidemiological information on nutrition and health, as well as the scientific evidence regarding diet/health relationships.

The information required for developing FBDG should help to identify significant nutrition and health issues, estimate the magnitude (prevalence) and severity (e.g. mild, moderate, severe) of such problems, distinguish high-risk age groups and other population groups,

and set priorities for nutrition education interventions in the health, agriculture and education sectors.

To obtain nutrition and health information, epidemiology and surveillance methods have been used. Epidemiology is used for fact finding purposes and to understand the connections between the observed effects and the possible causes. Surveillance involves the continuous collection of information to define the current situation, show trends, forecast changes, highlight priorities and lead preventive and corrective actions.

Ideally, each country would have good quality data from different sectors. However, in reality most countries will find that there are limitations in the available information. Such limitations should not be reasons to avoid or delay the FBDG development process. It is important to begin with the analysis and interpretation of the available information. Observations in the country can be compared to findings from other countries in a region, as well as with information from international scientific literature.

The process of FBDG development can lead to the recognition that more data is needed and this can stimulate the gathering of data. With regard to nutrition, data and information should include under-nutrition (inadequate energy consumption, protein energy malnutrition, micronutrient deficiencies) over-nutrition, diet-related diseases, and food safety in both rural and urban settings in the human life-cycle. Health information needed may include the prevalence of diet-related diseases, such as food-borne diseases (diarrhoeal diseases, parasitic infections and food intoxication), noncommunicable diseases (obesity, diabetes mellitus, hypertension, hyperlipidaemia and cholesterolaemia, cardiovascular diseases, cancer, dental caries and others), as well as other morbidity and mortality data. In addition, data on risk factors of noncommunicable diseases (undesirable food patterns, smoking, physical inactivity, stress and poor environments) as well as data on the availability, accessibility and quality of health services, may be needed. The extent to which nutrition and health information are required depends on the stage of the FBDG development process, the type of health issues that need to be addressed, the availability of nutrition data, and the timeframe and availability of funds and expertise. The following data and information sources may be consulted: health statistics, nutrition surveys, national census data, household expenditure surveys, food consumption surveys, physical activity assessments, FAO Food Balance Sheets, and international literature.

3.9 Developing food-based dietary guidelines: experiences from Thailand

Dr Prapaisri P. Sirichakwal, Mahidol University

Adequate nutrition is known to be essential for proper growth and development. Moreover, it has recently been accepted that healthy eating is a significant factor in reducing the risk of developing nutrition-related diseases.

Thailand is a country in transition, facing both undernutrition and overnutrition, although aspects of undernutrition, such as protein-energy malnutrition, vitamin A deficiency, iodine deficiency disorder, and iron deficiency anaemia, have been decreasing and infectious diseases have been brought under control. Concurrently, chronic and degenerative diseases or noncommunicable diseases, obesity, coronary heart disease, cancer, hypertension and diabetes mellitus, have become leading causes of death and disability in Thailand.

The purposes of developing Thai FBDG are to assist consumers in making dietary choices for well-being and diseases prevention; to assist governmental agencies in the development of policies to guide the implementation of nutrition interventions and education programmes; to assist agencies at the national and local level in the formulation and implementation of regulatory policies and programmes related to food, nutrition and health; to assist health care providers in primary diseases prevention; and to guide the implementation of food, nutrition and health goals by promoting the production of healthy food.

Thai FBDG comprise two parts, one qualitative containing the nine guidelines, and one quantitative, containing, the food guide model "Nutrition Flag". The FBDG were designed to help people to choose what and how much to eat from each food group. The FBDG were developed jointly in 1996 by the Nutrition Division, Ministry of Public Health, Institute of Nutrition, Mahidol University, and other nutritionists and health personnel from various universities. There are nine guidelines for healthy Thais of 6 years of age and older:

- Eat a variety of foods from each of the five food groups and maintain proper weight.
- Eat an adequate amount of rice or alternative carbohydrate sources.
- Eat plenty of vegetables and fruit regularly.
- Eat fish, lean meat, egg, legumes and pulses regularly.
- Drink sufficient amounts of milk every day.
- Choose a diet that is moderate in total fat.
- Avoid an excessive intake of sweet and salty foods.
- Eat clean and safe food.
- Avoid or reduce the consumption of alcoholic beverages.

A rationale and principles were formulated for each dietary recommendation, reflecting current scientific consensus on the most

important dietary measures associated with consuming adequate amounts of essential nutrients and reducing the risk of chronic diseases.

The Thai food guide is the “Nutrition Flag” and visualizes the first guidelines which contain messages relating to dietary moderation, proportionality and variety. The food guide suggests a range of daily servings from each of the major food groups. It is understood that a single model cannot represent every aspect of the FBDG; however, it can visualize the most important concepts in a clear and memorable way.

Steps in the development of the Thai Food Guide Model included setting nutritional goals based on Thai RDA and RDI ($\geq 70\%$); assignment of unit used for one portion of each food group: using common household units typical for Thais, such as rice-serving spoon, table spoon, etc.; determination of portion size and portion number from actual consumption data and establishment of the amount of portions of each food group for 3 caloric levels, 1600, 2000 and 2400 kcal; determination of average nutritive value for each food group, using the popularity vote method, portion size and correction for cooking loss/gain; evaluation of nutritive value of the recommended amount of food from a combination of food groups by calculation for nutrient intake per day (and adjustment of the recommendation if it did not reach the nutrient goals).

Several kinds of food guide modes were developed based on Thai culture and the proportion of food groups that were easy to demonstrate. These modes included pilot testing for understanding and acceptability in various educational and economic groups; implementation through educational tools to public offices, schools, academic institutes, hospitals, hotels and other public places; training of target groups; monitoring and evaluation by periodic testing of knowledge, attitude and practice among schoolchildren, teenagers and adults.

Ongoing activities related to Thai FBDG include a campaign for lowering sugar consumption through a “no sugar kids network”; a healthy eating index for Thai people; healthy snacks with friendly nutrition labelling for schoolchildren; and the school lunch programme.

Several lessons have been learned from developing the Thai FBDG. Policy-makers have to support the programme; collaboration between nutritionists from various universities and the implementing organization is essential; a nutrient database for local food is necessary; recent national food consumption and nutritional surveys are required; audience input/comment is needed for guidelines and for the food guide; different guidelines may be needed for special population groups; baseline data for food consumption are crucial for evaluating the success of the FBDG in terms of changes in eating patterns; information on new food products and food preparation may be incorporated in nutrition education in order to make the guidance more successful.