

# Development of Food-Based Dietary Guidelines for Iran: A Preliminary Report

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## Key Words

FBDGs · Iran, development of FBDGs · Nutrition education

## Abstract

Iran is undergoing an epidemiological and nutritional transition. Over the last 2–3 decades, major changes in lifestyle and food consumption patterns have occurred, as well as in the socio-economic situation. Disease patterns have changed and some micronutrient deficiencies and chronic nutritional diseases, including obesity, are on the increase. Considering these, food habits, and the national food system, the Nutrition Department, Ministry of Health and Medical Education and the Iranian Nutrition Society jointly undertook to prepare food-based dietary guidelines (FBDGs). The process consisted of three phases: agreeing on food groups, designing pictorial FBDGs, and field testing them. Three working teams, supported by a large group of advisors consisting of nutritionists, epidemiologists, food/nutrition planners, and other relevant experts were formed. The first draft of the food groups consisted of 7 groups: Bread and Cereals; Meats and Eggs; Pulses; Fruits; Vegetables; Milk and Dairy Products; Miscellaneous (nuts, oils and fats, sugar and sweets, soft drinks). It was sent to 20 nutrition and public health experts for feedback. A suggestion was made to divide the Miscellaneous group into two – oils and fats, and Miscellaneous (sugars and sweets, pickled and salted food

items). Three pictorial FBDGs were then designed: a plate, a pyramid, and a rectangle. Thus, three posters were prepared by the working teams and revised by a group of experts, followed by a preliminary evaluation. The final step will be field testing of the three revised, modified designs by the public and experts and their final evaluation.

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## Introduction

The history of developing food-based dietary guidelines (FBDGs) in Iran dates back to the early 1960s, when the National Food and Nutrition Institute presented a poster showing the Four Basic Food Groups. In 1990, dietary guidelines, basically centered on food diversity, better methods of home food preparation, low salt and sugar intakes, breastfeeding, weight watching, and prevention of obesity were proposed and announced by the Iranian Nutrition Society [1]. The Society further revised the national food groups and dietary guidelines and included messages about physical activity. Recommendations were also made to adopt appropriate strategies to promote the nutritional awareness of the public.

Basically, food groups and dietary guidelines for any country – or even a region in a country – should be designed with due consideration of the prevailing health

and nutrition situation, as well as of the socio-economic profile. Thus, before describing the process of developing the food groups and dietary guidelines, it will be appropriate to discuss briefly the health and nutrition situation in Iran.

As a result of lifestyle, food patterns, and socio-economic changes over the recent decades, Iran is undergoing nutrition transition [2, 3]. Furthermore, successful health policies and programs have helped significantly in an increase in the life expectancy and promotion of public health. Disease patterns have changed. Studies show that diseases, such as diabetes mellitus, cancers, cardiovascular diseases, and obesity, have an increasing trend, while infectious diseases, although under control, are still problems. Another nutritional problem of great concern is micronutrient deficiencies. Sections of the population suffer from a deficiency, or at least a low intake of iron, vitamins A and D, riboflavin, and calcium. Wasting and stunting are seen in some parts of the country [4]. On the other hand, all age/sex groups are at the risk of overweight and obesity due to a low level of regular physical activity and unsound food habits and nutritional behavior [5]. National food consumption surveys reveal that the staple food is cereals – mainly bread and rice. On the basis of the Food and Agriculture Organization and World Health Organization (FAO/WHO) [6] and the United States Department of Agriculture (USDA) [7] recommendations, the average daily intakes of animal products and pulses are low [8], oils and fats and simple sugar consumptions are on the increase, and the trend of animal products and pulses consumption is a downward one.

On the average, more than 50% of the daily energy and protein intakes are supplied by cereals [8]. The shares of animal products – which provide 35% of the daily intake of calcium and 55% of that of vitamin A – in supplying energy and protein are only 12 and 30%, respectively. The mean per capita daily energy intake in both urban and rural areas exceeds 100%.

### The Process

The Nutrition Department of the Ministry of Health and Medical Education and the Iranian Nutrition Society (ATA) decided to prepare a food group plan and FBDGs for the Iranian population. In order to proceed systematically, groups of individuals with a wide range of expertise were formed, each charged with a specific task, with technical advice and support from nutritionists, food/ag-

riculture scientists, epidemiologists, planners, and other related experts.

Firstly, information was collected on food consumption patterns, common nutrition-related diseases, cultural characteristics, and ease of access to foods in the community. Then a draft food group plan was designed and proposed with due consideration of the above factors and variables. The draft consisting of 7 food groups (Bread and Cereals, Meats and Eggs, Pulses, Vegetables, Fruits, Milk and Milk Products, and Miscellaneous) was commented by a group of food, nutrition and other experts. The comments and views were discussed in a meeting and changes were made. The revised draft was sent to another selected group of experts, followed by individual structured interviews with them. The final food group plan proposed by the team was as follows:

*Group 1 – Bread and Cereals:* all types of bread, rice, macaroni, wheat, barley

*Group 2 – Meats and Eggs:* all types of red meat, all types of white meat, eggs, shrimps

*Group 3 – Pulses:* all types of beans and peas, nuts

*Group 4 – Vegetables:* all types of leafy vegetables, all types of non-leafy vegetables

*Group 5 – Fruits:* apples, citrus fruit, grapes, other fruits

*Group 6 – Milk and Milk Products:* milk, yoghurt, cheese (other local dairy products)

*Group 7 – Fats and Oils:* all types of fats and oils, with emphasis on non-hydrogenated oils

*Group 8 – Miscellaneous:* sugars and sweets, salted and pickled products.

The next activity was development of FBDGs in the form of statements/sentences after thorough discussions and exchange of ideas. The FBDGs included statements/sentences about the following topics: Selecting a balanced diet; maintenance of ideal body weight; regular exercise; increasing fiber intake through eating high-fiber food items; increasing intake of low-fat milk and milk products; decreasing solid fat intake by eating less fried foods; eating white meats, in preference to red meat, as far as possible; reducing salt and sugar intakes.

In the next step, it was decided to develop pictorial food groups and FBDGs. Literature search showed several pictorial representations of food groups and FBDGs – different with regard to color and design – currently in use in different countries. An important factor in deciding what design and color to use is evidently the cultural characteristics of a population/community [9]. The most commonly used designs were found to be the food pyramid [10], the pagoda (traditional multistorey

**Table 1.** Food groups for the Iranian population, 2002

Group 1	Bread and Cereals: all types of bread, rice, pasta, wheat, barley
Group 2	Vegetables: all types of leafy vegetables, and non-leafy vegetables
Group 3	Fruits: apples, citrus fruit, grapes, other fruits
Group 4	Milk and Milk Products: milk, yoghurt, cheese, other local dairy products
Group 5	Meats, Eggs, and Pulses (legumes): all types of red meat, all types of white meat, eggs, shrimps, all types of pulses, nuts
Group 6	Miscellaneous: fats and oils, sugars and sweets, salted and pickled foods

**Table 2.** FBDGs for the Iranian population, 2002

The ABC of Healthy Nutrition:

- ▷ Sound selection of foods
  - ▷ Sound diet planning
  - ▷ Physical activity
- 1 Select a balanced, varied diet
  - 2 Eat in amounts so that your ideal body weight will be maintained
  - 3 Try to exercise regularly, at least 3 days per week, 30–40 min each time
  - 4 Through eating more whole wheat bread, fruits, vegetables, and legumes, increase your fiber intake
  - 5 Try to increase your intake of low-fat milk and milk products
  - 6 Reduce, as much possible, your solid fat and fried food intake
  - 7 Eat white meats as far as possible
  - 8 Reduce your intake of sugar
  - 9 Reduce your overall intake

house in the Far East) [11, 12], the food circle [9, 13, 14], the plate [15], and the rainbow [16]. After thorough discussions, exchange of ideas, and technical consultations, and bearing in mind the most common cultural characteristics, pictorial food groups and FBDGs were designed to be field tested subsequently. The designers were professional ones briefed by the consultants. Agreement was reached on three designs – pyramid, plate, and rectangle – on the basis of which three posters were prepared.

This was followed by a preliminary evaluation and field testing of the food group plans and FBDGs aiming

at determining their acceptability and understandability by representative samples of three groups of health and nutrition experts, health workers, and the public (mothers and local female health volunteers). Focus-group discussions and seminars were held for this purpose in several locations. Three posters were prepared based on the three designs agreed to – the pyramid, the plate, and the rectangle – and presented in actual sizes, and discussions were held. In addition, slide shows were given and the views and comments of the participants recorded. The final contents of the food group plan and the pictorial designs were prepared after analysis of the comments and views of the three groups. The pyramid was the design selected by the majority of the participants, followed by the plate and the rectangle.

### The Final Results

The final food groups and FBDGs for the Iranian population are presented in tables 1 and 2, respectively. A final evaluation of the pictorial designs will be made subsequently before official declaration. It was agreed unanimously that the process of preparing the FBDGs is a dynamic process and that, therefore, continuous evaluation and revision is essential. It is recommended that these guidelines be revised every 5 years.

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