

## 2 Food Guides

### Abstract

Consumers are often confused by the information and advice continuously offered by the various sources on nutrition and healthy lifestyles, sometimes even by the details on food labels about the composition of nutrients (carbohydrates, fats, proteins, vitamins and minerals). The information is based on historical moments that affect food availability and messages that accompany the sale, as for example the current trend to consume gluten-free products by people suffering from celiac disease and people consuming gluten-free products by fad. Conversely, in the Italian post-war period, many advertising posters offered gluten-added pasta to help balance a low-nutrient diet. Nowadays, this poster (Figure 2.1) may seem paradoxical but it was the result of an Italian historical era, with a completely different food availability. Just remember that, according to the first data available from FAO in 1961, the Kcal per capita daily available amounted to 2958 and the protein availability were equal to 82.54 grams per day per person. In 2013 the Kcal availability rose to 3579 registering an increase of 21% and protein availability increased to 108.51 grams per day per person, registering a 31% increase attesting a greater distribution of both availabilities among the population in order to ensure the extinction of structural and contingent forms of hunger.

Figure 2.1 Advertising of gluten-added pasta and gluten-free pasta.



In order to understand nutrition in future years, several factors must be taken into account: the internationalization of food as well as the need to satisfy food availability in developing countries, food sustainability and the protection of each individual's health.

Therefore, we can distinguish two fundamental concepts, food security, intended as the need to guarantee populations' sufficient access to food availability, as-

sociated to the quantitative disproportion between North and South in the world, defined by FAO as “a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. Based on this definition, four food security dimensions can be identified: food availability, economic and physical access to food, food utilization and stability over time”, and food security, to be interpreted as the need to ensure the non-toxicity of foodstuffs along the entire production chain where chemical, physical or biological hazards may occur, a problem that is mostly registered in globalized food contexts.

### **Foodstuff classification**

In recent years, food products have undergone a major reformulation to meet the demands of consumers who are increasingly demanding and attentive to nutritional, symbolic, evocative and healthy contents.

The food industry has gradually changed supply and created highly innovative products with excellent quality results. Just remember all the gluten-free or lactose-free products made to meet the needs of people with obstructed metabolic activity when digesting certain substances.

As a result, a comprehensive review of the general food taxonomy was required, given the increase in nutrition information from highly respected medical and pharmaceutical sources.

If the traditional classification provided for the division of food into homogeneous classes, today this division should not be considered comprehensive because it cannot include all the food innovations of recent years.

The traditional classification divided the products into 7 categories including: fresh and preserved meat, seafood products, eggs; milk and derivatives; cereals and derivatives, tubers; dried legumes; fat and condiment oil; vegetables and fruit sources of vitamin A; vegetables and fruit sources of vitamin C (Vannozzi G., 2009).

The many innovations in the food sector, from ‘free from’ to ‘vegan’, from international products to local specialties do not allow us to place all foods in conventional classes. There is a general consensus on the importance of food nomenclature and its respective description. The preparation of reliable data on food requires a precise identification of the different types of food. Even good quality data can be a source of error if they come from foods that are not clearly defined (Polacchi, 1987).

Therefore, we propose an analysis of the nutrition information and food pyramids, in order to properly place the products based on the real needs of the body, regardless of their classification.

## **2 Food Guides: history, evolution and international models**

In order to disseminate simple and understandable nutritional information, scientific societies, such as the United Nations Food and Agriculture Organization (FAO) and the World Health Organization (WHO) have produced and updated the basic food dietary guidelines (FBDGs) since 1992 (FAO/WHO, International Conference on Nutrition. World Declaration on Nutrition and Plan of Action for Nutrition., 1992) (WHO/FAO, 1998) (FAO/WHO, Preparation and use of food-based dietary guidelines., 1996). The guidelines are designed to provide general indications of what the population should consume in terms of food and nutrients. They are written in a language easily understandable to the general public and illustrations addressing the basic problems of public health, such as chronic non-communicable diseases, providing a basic framework for planning meals or daily menus, in order to obtain a healthy and balanced diet that is consistent with an appropriate social and economic lifestyle (Concetta Montagnese, 2015).

The *Food Guides*, composed of food groups as we know them, do not appear in the official publications of the USDA (United States Department of Agriculture) until 1916. Caroline L. Hunt, Nutrition Specialist at the Bureau of Home Economics, is generally credited as the creator of the first food guide. In this guide, foodstuffs were classified into five macro-groups: milk and meat, cereals, vegetables and fruits, fats and fatty foodstuffs, sugars and sugary foodstuffs. The criteria of food grouping were based on what was known at the time about nutritional needs and their composition. The quantities of food were listed in family units and offered in the form of menus and recipes.

In 1916, Hunt published the booklet *Food for Young Children*, dedicated to child nutrition, while the following year, based on Hunt's studies, the first official guide for general groups of population was published, with the title *How to Select Foods* (Hunt, 1917).

In the early 1930s, the economic ties of the great American depression even influenced the development of food guides, turning them into the necessary advice on how to choose foods from a nutritional, but also economic point of view. In 1933, Hazel K. Stiebeling, a *food economist* from the USDA's Household Economics Bureau, created a buying guide to help people choose food in order to balance their diet (Stiebeling H.K., 1933). It comes in the form of food plans for families in relation to the different levels of economic availability of the same, defining the amount of food to be purchased and used in a week, divided into four ranges of expenditure, to meet the nutritional needs of men, women and children of different ages. These family food plans were illustrated with 12 large groups of foods: milk, potatoes and sweet potatoes, dried beans, peas and walnuts, tomatoes and citrus fruits, green and yellow leafy vegetables, other vegetables and fruit, eggs, lean meat, poultry and fish, flour and cereals, butter and other fats, sugars. In this way, it was recognized that some groups of foods, such as those based on cereals, potatoes and dried beans, could integrate other groups of foods while maintaining a relatively low purchase cost for the period and, therefore, being accessible to all segments of the population.

The optimum composition of expenditure from nutritional and economic point of view is an important goal to achieve for every family, but over the years the economic dimension has gradually lost importance in favour of the exclusive nutritional value.

In 1943, the *Basic Seven* food guide was released in the form of a flyer from the National Wartime Nutrition Guide (USDA, National wartime nutrition guide, 1943). The guide included the following food groups: 1) green and yellow vegetables; 2) oranges, tomatoes and grapefruit; 3) potatoes, other vegetables and fruits; 4) milk and dairy products; 5) foods based on meat, poultry, fish, eggs, dried peas and beans; 6) bread, flour and cereals; 7) butter and fortified margarine. Rather than the number of portions of the food groups, this guide had the task of suggesting alternative choices of food groups in case of limited supplies during the war.

With the end of the war in 1946, the *Basic Seven* was revised and published in the US Food Guide. This guide divided the different categories of foods into recommended portions, suggesting their daily portions. *Basic Seven* has been widely used for many years, but its complexity and lack of specificity over portions have led to the need for successive simplifications.

A new food guide containing four groups of food was published in 1956, as part of the *Essentials of an Adequate Diet* by the USDA (Page L., 1956). The guide was later published in the form of a flyer with the title of *Food for Fitness: A Daily Food Guide* (USDA, Food for fitness : a daily food guide, 1958). The food guide outlined in these publications became known as the *Basic Four*, where a minimum number of portions of four food groups was recommended: (e.g. two portions of dairy products, two portions of meat, fish, poultry, eggs, dried beans and nuts, four portions of fruit and vegetables and four servings of wheat products).

In 1979, the USDA presented the *Hassle-Free Guide to a Better Diet* in a colourful booklet titled *Food* (USDA, The Hassle-free guide to a better diet, 1980), whose indications were very similar to the *Basic Four*, since even the description of the formation of a daily diet had the same number of portions for the group of milk, meat, fruit and vegetables and wheat products, to which a fifth food group was added, consisting of fats, sweets and alcohol. This different food group contained foods that provided a lot of calories and few nutrients in comparison to the other four but took into account the process of industrialization and the spread of an increasingly large number of foods in the American society. It was therefore necessary to moderate its consumption.

Since the early 80s, the requests for nutritional information from consumers have increased. To meet this need, the USDA and the Department of Health and Human Services elaborated seven principles of health known as the *Food Wheel: A Pattern for Daily Food Choices*. The guidelines guided consumers to an adequate supply of nutrients, but at the same time placed the emphasis on moderate consumption of foods rich in fat and sodium.

A summary of the publications just described with the main contents and the related illustrations are shown in table 1:

Table 2.1: American Food Guides, from the beginning of the century to the 80s.

<p><b>1916 to 1930s</b></p> <p>«Food for Young Children» and «How to Select Food»</p> <p>Established guidance based on food groups and household measures</p> <p>Focus was on “protective foods”</p>	 <p>The image shows two historical food guides. On the left is 'FARMERS' BULLETIN 717 FOOD FOR YOUNG CHILDREN' by Caroline L. Hunt, featuring a photograph of a child eating. On the right is 'FARMERS' BULLETIN 808 HOW TO SELECT FOODS' by Caroline L. Hunt and Helen W. Atwater, featuring a photograph of various food items.</p>
<p><b>1940s</b></p> <p>A Guide to Good Eating</p> <p>Foundation diet for nutrient adequacy</p> <p>Included the daily number of servings needed from each of the seven food groups</p> <p>Lacked specific serving sizes</p> <p>Considered complex</p>	 <p>The image shows a circular food guide diagram with seven segments, each representing a food group and its recommended servings. The segments are: 1. Leafy, Green, and Yellow Vegetables (1 or more servings); 2. Citrus Fruit, Tomatoes, Potatoes, and Peas, Beans (1 or more servings); 3. Potatoes, Vegetables, and Peas, Beans (2 or more servings); 4. Milk, Cheese, Ice Cream (Children: 3 to 4 cups milk; Adults: 2 or more cups); 5. Meat, Poultry, Fish, Eggs, Dried Peas, Beans (1 to 2 servings); 6. Bread, Flour, Cereals (1 or more servings); 7. Butter and Fat, Margarine (Some daily). The center of the diagram features a family and the text 'EAT THIS WAY EVERY DAY'.</p>

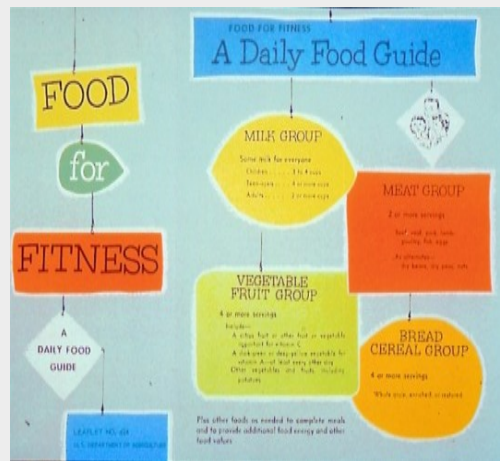
1956 to 1970s

### Food for Fitness, A Daily Food Guide

Foundation diet approach—goals for nutrient adequacy

Specified amounts from four food groups

Did not include guidance on appropriate fats, sugars, and calorie intake



1979

### Hassle-Free Daily Food Guide

Developed after the 1977 Dietary Goals for the United States were released

Based on the Basic Four, but also included a fifth group to highlight the need to moderate intake of fats, sweets, and alcohol



1984

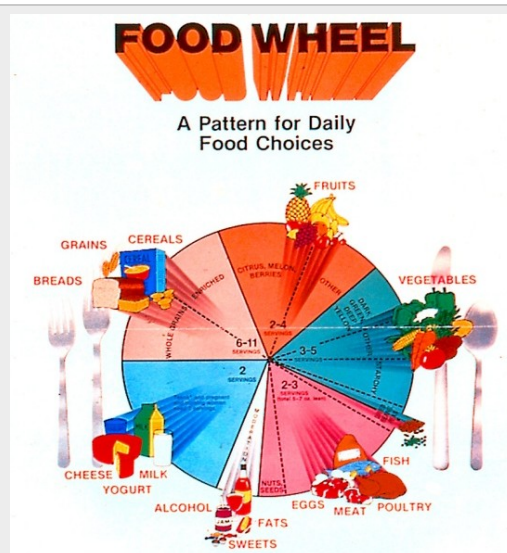
**Food Wheel: A Pattern for Daily Food Choices**

**Total diet approach Included goals for both nutrient adequacy and moderation**

**Five food groups and amounts formed the basis for the Food Guide Pyramid**

**Daily amounts of food provided at three calorie levels**

**First illustrated for a Red Cross nutrition course as a food wheel**



Source: <http://www.choosemyplate.gov/food-groups/downloads/MyPlate/ABriefHistoryOfUSDAFoodGuides.pdf>

In the 1990s, an increasing number of medical studies on diet and nutrition converged on the spread of some diseases related to the composition of an unbalanced diet. During the same years, food pyramids began to spread as an educational tool for consumers to choose food. In fact, in 1992, the USDA (United States Department of Agriculture) officially made and released the first food pyramid with the goal of reducing the risk of chronic diseases in the population related to food consumption.

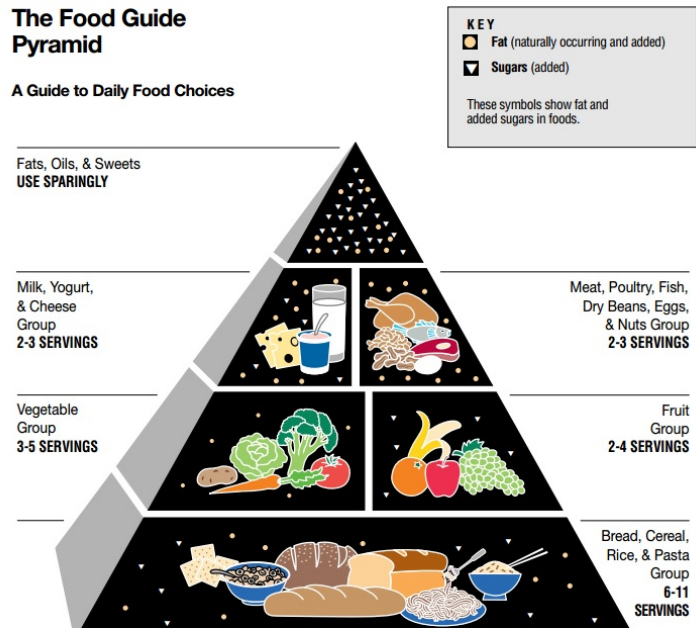
The reading of the pyramid requires some explanation. The first is that at the bottom are the foods that can be consumed daily and frequently, while the foods located at the top should be consumed in smaller amounts.

The suggestion is to change as much as possible the composition of foods in daily consumption.

As shown in figure 2.2, at the base of the pyramid are *complex carbohydrates* starchy foods (pasta, bread, potatoes and rice) whose consumption is recommended in the order of 6-11 daily servings; whole grain products are also indicated to meet daily fibre requirements. In the second part, we find the two separate categories of fruits and vegetables. The recommended consumption is in the order of 3-5 servings per day for vegetables and 2-4 servings per day for fruits; it is recommended the consumption of seasonal fruits and vegetables. In the third part, we find the group of animal and vegetable proteins and dried fruit, 2-3 servings per day, the consumption of lean meat and fish at least twice a week is strongly recommended and eggs in quantities not exceeding 2-3/week. As alternatives to the previous foods, cold cuts, cheeses and white meats can be consumed to change the diet. For the consumption of milk and dairy products, those with a low fat content

are indicated. Finally, at the top of the pyramid, we find foods to be consumed in moderation, such as simple sugars, fats and seasoning oils.

Figure 2.2: The Food Guide Pyramid



Source: USDA, 1992.

In the same year, in Italy, the Istituto Nazionale della Nutrizione (INN, now merged into INRAN, Istituto Nazionale di Ricerca per gli Alimenti e la Nutrizione) released a classification of foods subdividing them into seven macro categories, summarizing and deepening the principles with which the first American food pyramid was created by the USDA. Its purpose was reducing nutritional deficiencies in the Italian eating habits and including the typical assumptions of the Mediterranean diet.

Table 2.2: 17 food groups in the traditional classification.

Food groups	Foodstuffs	Nutritional value
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Food of the first group: fresh and preserved meat, seafood products, eggs.	<ol style="list-style-type: none"> <li>1. Meat and offal of cattle, pigs, sheep, horses, poultry and game.</li> <li>2. Canned meat, cold cuts, etc.</li> <li>3. Saltwater and freshwater fish, shellfish, both fresh and frozen.</li> <li>4. Eggs</li> </ol>	They provide proteins of high biological value, lipids (saturated fatty acids and cholesterol, white meat and fish contain discrete quantities of polyunsaturated fatty acids) iron, B vitamins.
Food of the second group: milk and dairy products.	<ol style="list-style-type: none"> <li>1. Fresh milk, UHT, sterilized, whole, partially skimmed, skimmed.</li> <li>2. Condensed milk, milk powder.</li> <li>3. Yogurt, fresh and aged cheeses, cottage cheese.</li> </ol>	They provide high biological value proteins, calcium and phosphorus, B vitamins, vitamin A and vitamin D, lipids.
Food of the third group: cereals and derivatives, root vegetables.	<ol style="list-style-type: none"> <li>1. Rice, wheat, rye, barley corn.</li> <li>2. Pasta, bread, baked goods.</li> <li>3. Potatoes.</li> </ol>	They provide polysaccharides (starch and fibre), low biological value proteins, B vitamins.
Food of the fourth group: dried vegetables.	<ol style="list-style-type: none"> <li>1. Beans, peas, beans, soy and lentils.</li> </ol>	They provide proteins with a medium biological value, polysaccharides (starch and fibre), B vitamins, iron and calcium.
Food of the fifth group: seasoning fats and oils.	<ol style="list-style-type: none"> <li>1. Butter, margarine, lard, cream.</li> <li>2. Olive oil, seed oil.</li> </ol>	They provide lipids (saturated, monounsaturated and polyunsaturated fatty acids, cholesterol), liposoluble vitamins.
Food of the sixth group: vegetables and fruit sources of vitamin A.	<p>Vegetables and coloured fruits:</p> <ol style="list-style-type: none"> <li>1. Yellow or orange (carrots, pumpkin, peppers, apricots, peaches, persimmons, melons, etc.).</li> <li>2. Green leaf (spinach, chicory, endive, lettuce, radicchio, etc.).</li> </ol>	They provide carotenes (precursors of vitamin A), other vitamins, mineral salts (potassium, phosphorus, magnesium), fibre, fructose and water.
Food of the seventh group: vegetables and	<p>Vegetables and fruit:</p> <ol style="list-style-type: none"> <li>1. Acidulous: oranges,</li> </ol>	They provide vitamin C, other vitamins, mineral salts (po-

fruit sources of vitamin C.	mandarins, lemons, grapefruit, kiwis, pineapples, strawberries, blackberries, raspberries, tomatoes and peppers. 2. In buds (broccoli, cauliflower, cabbage, leaf cabbage, etc.).	tassium, phosphorus, magnesium), fibre, fructose and water.
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Source: (Vannozzi G., 2009)

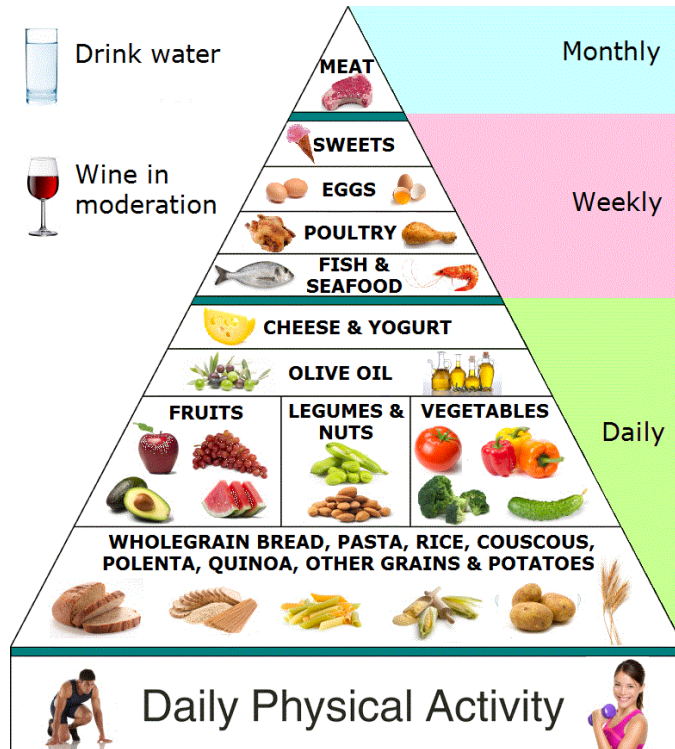
In 1993, the Harvard School of Public Health, in collaboration with the World Health Organization (WHO) and the Oldways Preservation Trust, introduced a new food pyramid with the purpose of formalizing the indications of the Mediterranean diet.

The Mediterranean diet is intended as the diet followed in the southern regions of Italy and Greece in the 60s where the prevailing consumption of fruit, vegetables, cereals and fish, combined with the limitation in consumption of meat, dairy products and saturated fats, in general, positively affected the longevity of the population. On the other hand, in countries where these products were lacking, the emphasis on animal fats and simple sugars contributed to the high mortality rate and the increased spread of heart disease.

In view of these conclusions, the first Mediterranean pyramid was created with a preventive purpose to prioritize the most adequate foods to preserve the efficiency and health of the heart and arteries (Fidanza, 1991).

In the pyramid (Figure 2.3), the daily portion of cereals (wheat, corn and rice) and its first and second processing products (flour, bread, pasta) are very significant; the abundance of leafy vegetables and fruit, with their rich supply of fibre, vitamins and mineral salts; large quantities of plant-based proteins derived from the same cereals and vegetables, lipid portion of mainly vegetable origin and the general use of it as a condiment of extra virgin olive oil, and its relative intake of mono and polyunsaturated fatty acids; the modest but decisive qualitative presence of dairy products, eggs, fish and meat; the energizing role exercised by fermented drinks, especially wine; the combination of foods according to several and imaginative forms, always complete from a nutritional point of view; a consumption of meals according to precise rules of daily periodization.

*Figure 2.3: The Mediterranean Food Pyramid.*



Source: <https://tipstoamorefulfillinglife.files.wordpress.com>

Directions on the consumption of wine and water and daily physical activity considered an indispensable element for maintaining the well-being of each individual appeared for the first time in the food pyramids.

In 2003, two US scholars, W.C. Willet and M.J. Stampfer, published in the journal "Scientific American" their proposal to revise the pyramid of 1992 with the name of *A Better Food Pyramid* (Figure 2.4) that had, compared to the previous government pyramid, some significant changes already incorporated in the Mediterranean pyramid, so as to acquire a more complex and articulated structure than the previous one.

The pyramid is divided into seven sections:

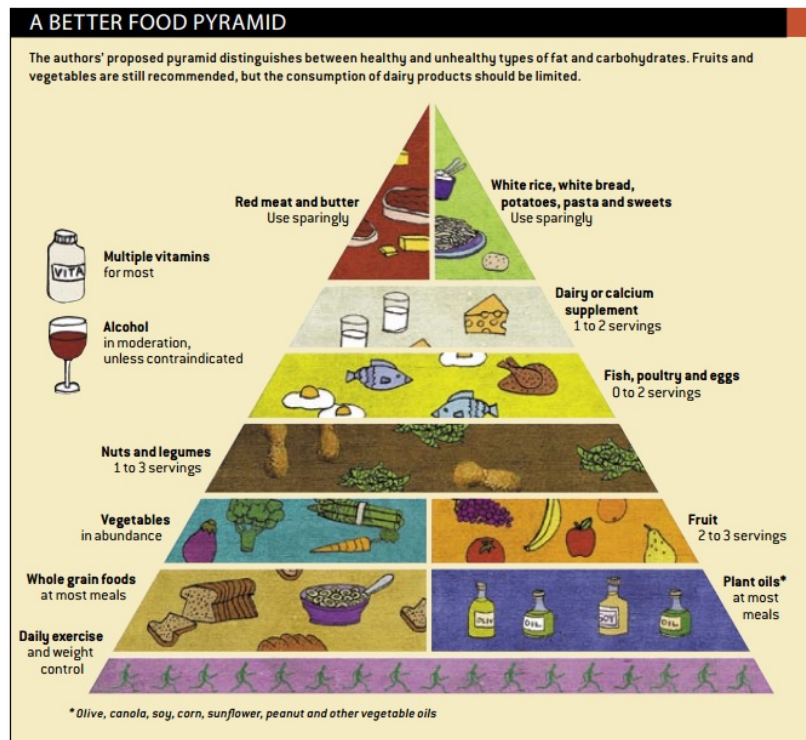
- physical activity at the base;
- three sections, divided into two groups of foods of vegetable origin: in the second section there are whole grains and oils, in the third fruit and vegetables, in the fourth dried fruit and vegetables;

- two sections, in which we find food of animal origin, in the fifth section, fish, eggs and white meat and, in the sixth, milk and dairy products;
- at the top of the pyramid two groups of foods are included, one represented by red meats and seasonings of animal origin, the other with sweets, potatoes, cereals and whole grain derivatives.

In this new pyramid the moderate consumption of alcoholic beverages is always recommended and the use of vitamin supplements is recommended as an absolute novelty. The main novelties, compared to the previous pyramid of 1992, are:

- the need to coordinate physical activity and diet, as they are considered favourable conditions for the well-being of the body or for the improvement of lifestyle, as already theorized in the Mediterranean food pyramid;
- the restriction of red meat and refined carbohydrates (not whole grain) in the diet;
- the different position of animal (fat) and vegetable (oils) lipids in the pyramid sections. In fact, the first type of lipid is rich in saturated fatty acids and cholesterol and is placed on the top, following the recommendation of moderate consumption, while the second type is rich in monounsaturated fatty acids and AGE and is placed in the base along with the recommended food for a wider consumption (Stampfer M.J., 2006).

Figure 2.4: A Better Food Pyramid



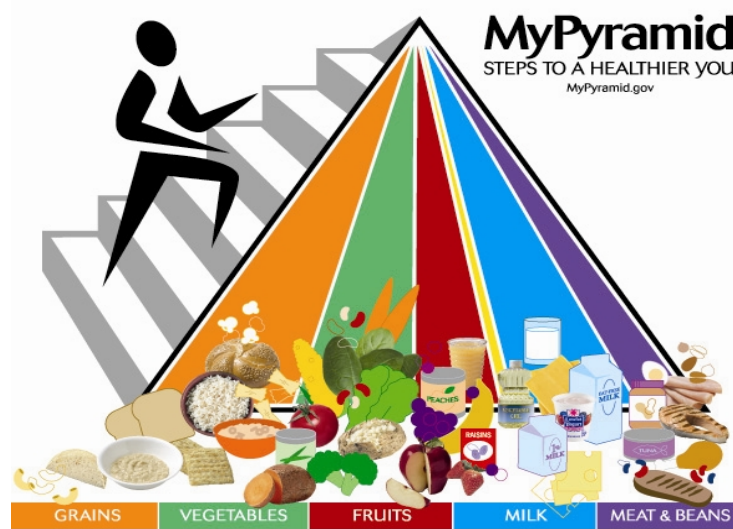
Source: Willet et al., 2003.

In 2005, the USDA published a new official food pyramid, named *MyPyramid*, designed to educate people on nutrition and offered to the public in conjunction with the publication of the *Dietary Guidelines for Americans 2005*: these guidelines were jointly developed by the USDA and the Department of Health and Human Services (HHS). These are constantly updated and published every five years. (USDA, Dietary Guidelines for Americans, 2005, 2005).

Despite having undergone considerable revision in the structure, details in diet composition remain virtually unchanged.

The design of *MyPyramid* consists of vertical coloured stripes. Each colour has a different dimension, suggesting the amount of food that one should choose from each food group. The person on the stairs is there to remind of the importance of physical activity (Figure 2.5).

Figure 2.5: MyPyramid



Source: MyPyramid.gov, 2005.

The shape of *MyPyramid* symbolizes a personalized approach to healthy eating and physical activity. The symbol was designed to be simple and was developed to remind consumers to make healthy food choices and exercise every day.

The pyramid shape is defined as follows:

- Activity: represented by the person who climbs the stairs up to the top, to remind of the importance of daily physical activity.
- Moderation: represented by the narrowing of each food group from the base upwards. The wider base indicates foods with little or no solid fats or with no added sugar. The narrower upper area represents foods that contain more added sugars and solid fats. The greater the physical activity, the greater the recommended consumption of these foods.
- Proportionality: shown by the different bandwidths of the food groups. The widths suggest the amount of food a person should choose from each group. The widths are just a general track, not exact proportions.
- Variety: symbolized by the 6 coloured bands representing the 5 groups of foods in the pyramid and the oils. This shows that foods from all groups are needed daily for good health.
- Gradual improvement: encouraged by the slogan. It suggests that individuals can benefit by carrying out small daily steps concerning the performance of physical activity and intake of a proper diet.

Table 2.3 shows the product categories mentioned in *MyPyramid*:

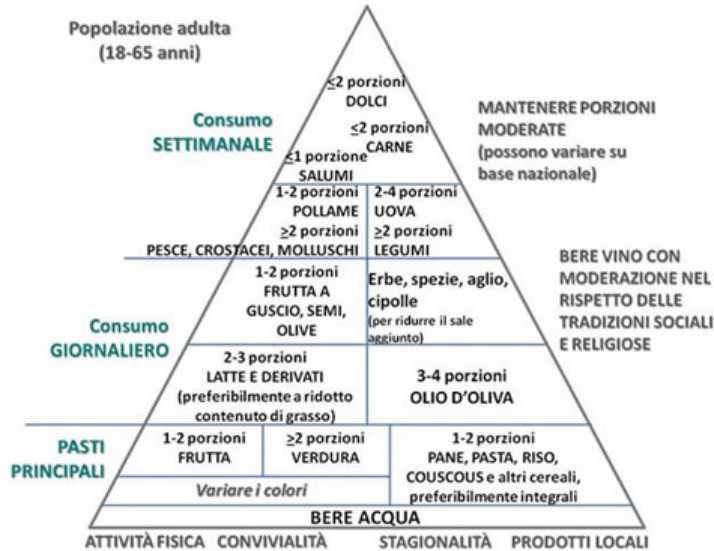
Table 2.3: product categories in MyPyramid.

GRAINS Make half your grains whole	VEGETABLES Vary your veggies	FRUITS Focus on fruits	MILK Get your calcium-rich foods	MEAT & BEANS Go lean with protein
Eat at least 3 oz. of whole-grain cereals, breads, crackers, rice, or pasta every day  1 oz. is about 1 slice of bread, about 1 cup of breakfast cereal, or 1/2 cup of cooked rice, cereal, or pasta	Eat more dark-green veggies like broccoli, spinach, and other dark leafy greens  Eat more orange vegetables like carrots and sweetpotatoes  Eat more dry beans and peas like pinto beans, kidney beans, and lentils	Eat a variety of fruit  Choose fresh, frozen, canned, or dried fruit  Go easy on fruit juices	Go low-fat or fat-free when you choose milk, yogurt, and other milk products  If you don't or can't consume milk, choose lactose-free products or other calcium sources such as fortified foods and beverages	Choose low-fat or lean meats and poultry  Bake it, broil it, or grill it  Vary your protein routine – choose more fish, beans, peas, nuts, and seeds
For a 2,000-calorie diet, you need the amounts below from each food group. To find the amounts that are right for you, go to MyPyramid.gov.				
Eat 6 oz. every day	Eat 2½ cups every day	Eat 2 cups every day	Get 3 cups every day; <small>for kids aged 2 to 8, it's 2</small>	Eat 5½ oz. every day

Source: MyPyramid.gov, 2005.

In 2009, INRAN publishes a new pyramid, the Pyramid of the Modern Mediterranean Diet (Figure 6).

Figure 2.6: the Pyramid of the Modern Mediterranean Diet



Source: INRAN, 2009.

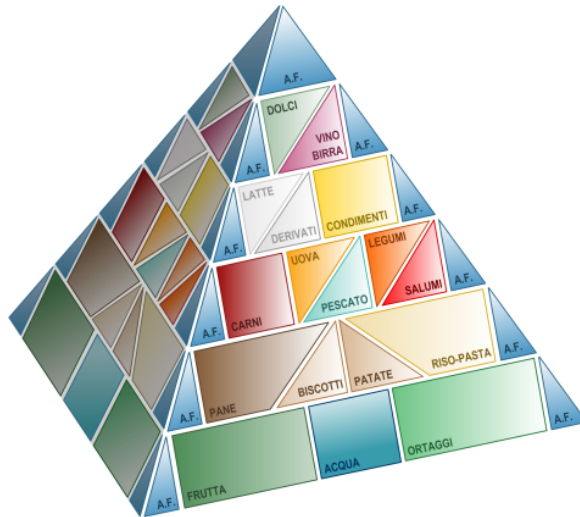
The new food pyramid provides that vegetable fats and cereals must be taken at every meal; fruits and vegetables should be consumed in amounts of 2 or 3 servings per day; healthy diets always provide for the daily integration of some small portion of legumes and also of dried fruit, in detail, a minimum of once a day, up to a maximum of three. Eggs, white meats and fish, as well as cheeses with high calcium content, should be taken three times a week; refined cereals, butter, potatoes and red meat should be consumed moderately due to the progressive increase in the weight of population groups as a result of increased availability of Kcal per capita and excessive consumption of food.

In order to guide the population towards healthier eating habits, the Italian Ministry of Health, with the Ministerial Decree of 1.09.2003, entrusted a group of experts with the task of developing a relevant diet model consistent with the current lifestyle and the Italian gastronomic tradition.

Thus, the Weekly Pyramid of the Italian Lifestyle was born (Figure 2.7), elaborated by the Institute of Food Science "La Sapienza" of the University of Rome, which is based on the definition of Wellness Quantity (WQ) referring to food and physical activity, defined as P.A.

Figure 2.7: The Weekly Pyramid of Italian Lifestyle





*Source: <http://www.piramideitaliana.it>.*

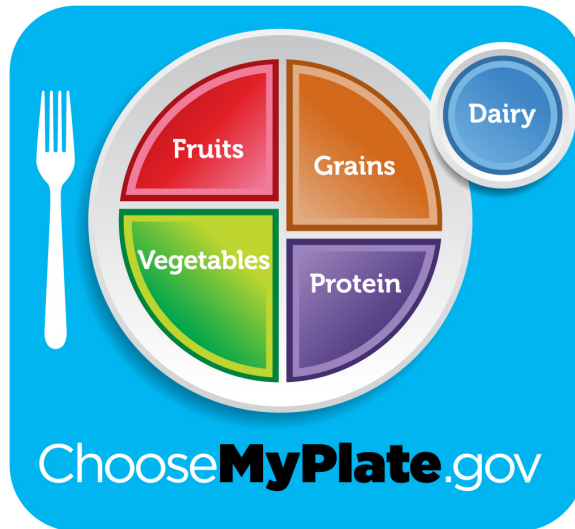
The binomial of quantity-wellbeing in this pyramid is intended to bring the consumer's attention to:

1) portion of food, such as quantity in grams, compatible with the well-being of the body; therefore, good and/or bad foods are not indicated but their effect depends on the amount consumed daily; the choice of an adequate number of food portions must concern all groups of food present in the daily pyramid to ensure the intake of all the nutrients;

2) physical activity, to avoid falling into a sedentary lifestyle. The reference WQ (Wellness-Quantity) is a 15-minute walk at a brisk pace. It is recommended at least 2 WQ/day, that is, 30-minute walk, which can also be divided during the day.

In 2011, the USDA publishes the guideline *MyPlate* (Figure 8). The guideline shows the five food groups (fruits, vegetables, proteins, cereals and dairy) divided into one dish. It was designed to be easily understood when choosing foods to compose your own meal. To this day, it remains the latest reference in terms of Food Guides.

*Figure 2.10: MyPlate*



Source: ChooseMyPlate.gov.

### Conclusions

In defining dietary models that, more than others, satisfy the needs of the single consumer, we must take into account a variety of factors linked, on the one hand, to the food intake and to the foodstuffs satisfying it, and on the other hand, dependant on the lifestyle and genetic code of the individual. This results in an increased complexity of the decisional algorithm regarding the composition of the daily diet by the consumer that requires an ever-increasing level of knowledge and awareness in regards to nutritional dynamics. It is understood that, for the consumer, the acquisition of information is not always straightforward, as they need to decode a copious amount of messages from the producer to the product labeling and do not always give the opportunity to make rational choices.

For this reason, a research for simplified information tools able to directly show the degree of the product interference with the consumer's well-being – utilising, for example, symbols and colours – is currently being carried out at an international, European and national level. This is due to the fact that a lot of nutritional information is dedicated to insiders of the sector only and not always easily transferable to the consumer.

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