

A Look at the Food Guide Pyramid

Since its introduction in 1992, the Food Guide Pyramid has become a widely recognized nutrition symbol. It was developed to guide consumers' daily food choices and help them interpret and apply recommendations from the *Dietary Guidelines for Americans*. The United States Department of Agriculture's (USDA) Center for Nutrition and Policy Promotion is currently reassessing the Pyramid to evaluate its messages in light of recent changes in nutrition science. According to the USDA, any Pyramid updates will most likely appear about the same time as the 2005 edition of the *Dietary Guidelines*. In view of this reassessment, it's a good time to take a look at the history and science behind food guides in the United States.

A Brief History of USDA's Food Guides

The USDA has a long history of advising Americans how to select foods that promote health by providing an adequate intake of nutrients and calories. One way in which the agency has done this has been to use up-to-date nutrition science in the development of food guides. The guides use consumer-friendly language to interpret scientific standards. As nutrition science, the food supply and American food habits have changed over the years, the USDA has periodically updated its food guides, but the ultimate process and goal have remained the same.

The USDA published its first daily food guide for children in 1916. This was followed, in 1917, by the first guidelines for the general population. Foods were divided into 5 groups: milk and meat; cereals; vegetables and fruits; fats and fat foods; and sugars and sugary foods. Foods were grouped according to that era's knowledge of food composition and nutrient needs. The number and composition of food groups have changed over the years (for example, the number of food groups has ranged from 4 to 12). This aspect of food guidance has been a regular source of controversy. There has never been agreement on the "right" number of food groups up to, and including, those represented in the Food Guide Pyramid.

The first food guides, as well as those that followed, have been accompanied by educational materials that addressed the needs of various age and interest groups. Over the years, the USDA food guides have been an important nutrition education tool, widely used and highly valued by public health and education professionals.

A Scientific Basis

Early food guides were based on the best scientific information available at the time. The scientific foundation of the guides was

strengthened in 1943, with the publication of the first Recommended Dietary Allowances (RDA), which provided a widely accepted scientific standard against which the intake and adequacy of individual nutrients and calories could be evaluated. Revisions of the RDA were published approximately every five years until 1989.

Other data were also used in the development of food guides: food consumption surveys, information on food availability and cost, surveys of nutritional status and findings from market research sources. Each revision has been based on careful analysis of appropriate food groupings, serving sizes and recommended numbers of servings within each group. Each food guide appeared in the *Federal Register* for public comment and was submitted for professional peer review, field-testing and final evaluation before publication.

Dietary Guidelines for Americans

The usefulness of the USDA's food guides, coupled with the public's desire for authoritative guidance on diet and health, led to development of the *Dietary Guidelines for Americans*. The first edition was issued jointly by the USDA and the Department of Health and Human Services in 1980, and has been revised approximately every five years since then. Recommendations in early versions were encapsulated in seven guidelines that began by advising the public to eat a variety of different foods to promote good health through consumption of adequate nutrients and calories. The recommendations promoted moderation in the use of sugar, salt and alcohol, and encouraged reduced consumption of high-fat, high-cholesterol, high-calorie, high-sodium, high-sugar foods.

Nutrition and Your Health: Dietary Guidelines for Americans had a new format, with ten guidelines, in the 2000 revision. For the first time, recommendations were divided under three headings: *AIM for Fitness*, *BUILD a Healthy Base* and *CHOOSE Sensibly*. The first heading emphasizes maintaining a healthy weight and increasing physical activity. The second heading repeats the familiar recommendations to consume a variety of fruits, vegetables and whole-grain products, with the addition of advice on the importance of food safety. The third category advises consumers to choose a diet: with a moderate intake of sugars; with less salt; low in saturated fat and cholesterol and moderate in total fat (previous guidelines had recommended diets low in total fat, saturated fat and cholesterol). As in previous guidelines, those who choose to drink alcoholic beverages are advised to do so in moderation. Throughout the *Guidelines*, messages are presented in a more positive, easily acted upon tone.

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Debut of the Food Guide Pyramid

When the *Dietary Guidelines for Americans* was being revised in the mid-1980s, people expressed a desire for an official graphic to accompany the document. The themes of the graphic were to follow the *Guidelines'* key themes: variety, proportionality and moderation. After lengthy consideration of colors and shapes, thorough review of written content and extensive consumer testing, the Food Guide Pyramid was issued in 1992. No one at the time considered the Pyramid perfect, but advocates felt many complex food and nutrition messages had been embedded in a simple and attractive graphic. Proof of the Pyramid's success has been its widespread recognition by the public, regular use by educators as a teaching tool and imitation by a multitude of other disciplines (e.g., exercise pyramids, fashion pyramids, life balance pyramids). Nutrition professionals regularly use the Pyramid as a teaching tool, as well as for making quick assessments of a patient's dietary intake and eating behaviors. Many variations have been created to address the specific dietary needs of ethnic, racial, geographic or age-related groups.

Since its creation, there has been a re-examination of the Food Guide Pyramid with each revision of the *Dietary Guidelines*. The goals are to ensure consistency and to evaluate the continuing effectiveness of the Pyramid.

The Food Guide Pyramid in Action

The pyramid shape selected to accompany the *Dietary Guidelines* was meant to convey the basic concepts of current dietary guidance. The simple illustration represents variety by depicting a number of foods within each food grouping. The arrangement of food groups reinforces the decreasing number of servings recommended as the consumer moves from the bottom to the tip of the Pyramid. The recommended number of servings is intended to promote calorie control, and a range is given to accommodate the varying calorie needs of individuals.

Some shortcomings of the Food Guide Pyramid were raised almost as soon as it was introduced. Some people objected to the placement of the different food groups. Others noted the omission in the Pyramid of three key dietary guidelines relating to healthy weight/physical activity, salt and alcohol. Additionally, no reference was made to the important role of dietary fiber. Still others felt it was difficult to classify the complex food combinations in many processed and formulated food products and recipes, within the somewhat simplistic groupings of the Pyramid.

Consumers found some aspects of the Pyramid unclear, especially the circles and triangles at the Pyramid tip. The key, located above the Pyramid graphic, identifies the circles as symbols for naturally occurring and added fats, and the triangles as symbols for added sugars. However, research has shown most people did not immediately read the key and simply ignored the symbols. No distinction is made on the Pyramid between types of fat (e.g., saturated, unsaturated). No recommended number of servings is given for foods in the Pyramid tip; instead, the advice is to "use sparingly."

Two frequent criticisms of the Food Guide Pyramid were directed to the bread, cereal, rice and pasta group. First, focus group reports found that consumers understood the foundational role of this food group, but felt they were being told to eat between 6 and 11 servings a day of bread, cereal, rice or pasta. Such a range of recommended servings obviously represents a broad variation in calorie intake, yet the Pyramid graphic makes no connection between the recommended number of servings and calorie levels. Another shortcoming is that the Pyramid makes no distinction between whole-grain and refined-grain foods, despite current advice to eat several servings of whole-grain foods daily.

Nutrition scientists complain that the broad food groupings of the Pyramid combine foods that are vastly different nutritionally. Thus, it would be possible for an individual to eat the recommended number of servings from each group and still be at risk for an inadequate intake of some vitamins, minerals and fiber. Some critics feel the range of recommended servings encourages Americans to eat the maximum number of servings from each group, resulting in calorie intakes that are excessive for all but the most physically active people.

A lack of information on the Food Guide Pyramid regarding appropriate serving sizes has been criticized. This criticism is not exclusive to the Pyramid; consumers have been confused about recommended serving sizes for years. The issue gained importance recently when research confirmed an increase in some typical food portions over the past ten years, both at home and in food service establishments. Americans today are often eating what they consider to be one portion but which nutrition guidelines would consider to be two or more servings. (For example, a one-and-one-half cup portion of cooked pasta counts as three servings from the Bread Group; a six-ounce beef burger counts as two servings from the Meat Group.)

Advocates of the Pyramid stress that no one graphic can convey all the recommendations for a healthy diet, and that any graphic

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can be misinterpreted. The Food Guide Pyramid was never intended as a stand-alone image but was intended to complement and illustrate the *Dietary Guidelines*. Other pluses are that 60% of Americans are familiar with the Food Guide Pyramid, and that this popular shape has become a basis for food guides around the world.

Dietary Reference Intakes

Following publication of the 10th edition of the RDA in 1989, work began on the 11th edition. The committee discovered significant conflicts regarding appropriate requirements for various nutrients. After unsuccessful attempts to resolve those conflicts, it was decided there was need for an expanded format and a new conceptual approach for presenting nutrient recommendations.

The proposed Dietary Reference Intakes (DRI) include the familiar RDA but also include three other sets of references: adequate intakes (AI) for some nutrients, estimated average requirements (EAR) for others and tolerable upper intake levels (UL) for a few. Like the RDA, DRI are designed to evaluate an average intake over a period of time and not to evaluate daily nutrient intake. Recommendations using the new format were published in 1997 for five nutrients. DRI for other vitamins, minerals, macronutrients, fiber and calories were published in 1998, 2000 and 2002. Additional reports on the DRI and their uses are planned for the near future.

Like the RDA before them, the DRI are scientific standards used to determine nutrient recommendations. The DRI also represent a

different philosophy for determining those requirements and, as such, have raised concerns among nutrition professionals. Many agree the flexibility inherent in the DRI for calories and macronutrients greatly expands options for making dietary recommendations. Such flexibility also requires considerable knowledge of food composition to arrive at valid conclusions, knowledge that consumers may be lacking. Nutrition professionals, however, are well equipped to balance DRI, *Dietary Guidelines*, the Food Guide Pyramid and specific needs and preferences of individuals. The DRI have given dietitians a unique opportunity to demonstrate those skills to the public. Instead of broad, sweeping generalizations, nutrition professionals can help clients customize a dietary pattern that suits their lifestyle, food preferences and nutritional needs.

Following publication of the DRI, the USDA began its comprehensive reassessment of the Food Guide Pyramid. Many questions must be resolved. How will the Pyramid address the roles of different types of fats, meats, dairy products and whole grains? Will the Pyramid consider differences in the glycemic index of various carbohydrates? Will consumers be given advice on eating more fruits and vegetables and selecting those containing nutrients considered preventive in the development of chronic disease? Changes will be based on scientific evidence, professional input and consumer research. While controversy will also, no doubt, continue, nutrition professionals will have a tool that represents a broad consensus of scientific opinion, and that they are uniquely qualified to use in their efforts to promote healthful eating. Nutrition professionals can also use the consumer insights gained during the reassessment of the Pyramid to tailor their nutrition education messages to better meet the needs of individual patients and clients.

Further Reading:

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