



Dietary Standards

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Dietary Goals

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Dietary Reference

Intakes (DRIs)

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Introduction

A wide variety of dietary recommendations are made by nutrition professionals. These recommendations are science-based observations that continually undergo changes. In order to study the nutritional needs of the population it is necessary to understand some of the methodology used in making recommendations. An organized, systematic approach known as **The Scientific Method** is employed to conduct this research. It consists of a series of steps to progressively solve a problem.

These steps include:

1. Identification of the problem
2. Background research
3. The design of the hypothesis
4. Testing the hypothesis
5. Analyzing the results
6. Drawing conclusions
7. Communicating the results

Oftentimes the identification of a problem involves asking a question in a way that evokes a measurable response. Background research obtained from reliable sources is useful in understanding the possible scenarios the question poses as well as the potential outcomes. It is always important to remember any variables. With this information and data drawn from past experiences, a hypothesis can be made. A hypothesis is often referred to as an educated guess that sets the research going in a focused direction. A simple statement is created detailing what is projected to occur. This statement is supported by a previous knowledge of the problem or by the information gathered during the background research. Next the hypothesis must be tested. An experiment is designed and then conducted. At the end of the experimental phase the results are analyzed and conclusions are drawn. The results are then conveyed in the form of a report. Quite often the results raise additional questions that must again be evaluated using the scientific method.

Setting the Standards

Essential nutrients and non-essential nutrients are both necessities in our diets. The amounts needed vary depending upon age, sex, growth status, and genetic traits. Conditions such as pregnancy, breastfeeding, illnesses, and drug use may also increase or decrease nutrient needs. To promote optimal health and to prevent disease, guidelines known as dietary standards have been established to provide information on the essential nutrients necessary to avoid nutritional deficiencies. Dietary standards are merely guidelines that are designed to meet the needs of the majority of healthy persons. These standards vary from one country to another because of national nutritional problems and the interpretations of scientists concerning dietary needs. The overall **dietary goals** for healthy individuals reflect the percentage of calories that should be consumed from each of the three major nutrients. The recommended age-appropriate macronutrient distribution percentages are listed in Table 2.1.¹ The tools that have been developed to determine specific dietary standards are extensive and are discussed in this chapter.

TABLE 2.1 Dietary Goals

Recommended Macronutrient Distribution by Age			
Age	Carbohydrate	Protein	Fat
Young children (1–3 years)	45%–65%	5%–20%	30%–40%
Older children and adolescents (4–18 years)	45%–65%	10%–30%	25%–35%
Adults (19 years and older)	45%–65%	10%–35%	20%–35%

Recommended Dietary Allowances (RDAs)

Since 1941 the Food and Nutrition Board of the Institute of Medicine (IOM) of the National Academy of Sciences has prepared **Recommended Dietary Allowances (RDAs)** that have set the types and quantities of nutrients that are needed for healthy diets. These values are the basic American standard. They have undergone several revisions that reflect the best scientific judgment on nutrient allowances for the maintenance of good health and the evaluation of diet adequacy for various groups of people. The levels of essential nutrients are determined by the board as adequate in meeting the nutrient needs of practically all healthy persons.

RDAs do not meet the needs of individuals with special nutritional needs resulting from illness, the use of medications, and inherited metabolic disorders. The RDAs for most nutrients are set at levels that exceed the requirements of many individuals. Consumption of less than the required intake is not necessarily inadequate, but as intake falls below recommended levels, the risk of inadequacy increases. The RDA for energy reflects the mean requirement for each category. Consumption of energy at too high a level can lead to obesity in most persons.² Similar population nutrient recommendations are set by scientists in other countries as well. The World Health Organization (WHO) is the coordinating health authority for the United Nations system. This organization is responsible for global health matters such as setting norms and standards for dietary recommendations and monitoring and assessing health trends. An important function of the WHO is making global nutrition recommendations, including vitamin and mineral levels for fortification programs.³

Dietary Reference Intakes (DRIs)

A set of standards known as the Dietary Reference Intakes or DRIs was developed during the mid-1990s by the IOM. The DRIs are standards determined jointly by American and Canadian scientists to replace the American RDAs and the former Canadian equivalent, the Recommended Nutrient Intakes (RNI). These standards outline the dietary nutrient intakes for healthy individuals in the United States and in Canada.⁴ There are over 40 nutrient substance values that are categorized according to the age, gender, and life stage group of individuals. These values are used for planning and assessing diets and include the following tables:

1. Estimated Average Requirements (EAR), Protein, Carbohydrate, Vitamins and Minerals
2. Recommended Dietary Allowances (RDAs) and Adequate Intakes (AI), Vitamins and Minerals
3. Recommended Dietary Allowances (RDAs) and Adequate Intakes (AI), Total Water and Macronutrients
4. Tolerable Upper Intake Levels (UL), Vitamins and Elements
5. Macronutrients Table
6. Doubly Labeled Water Data Set
7. Electrolytes and Water Table.

A description of the most commonly used values is listed in Table 2.2. Complete lists of the updated DRI values are provided in the Appendix of this text.⁵

TABLE 2.2 Nutrient Standards**Dietary Reference Intakes**

1. **Recommended Dietary Allowances (RDA)**
Nutrient intake goals for healthy individuals, derived from the Estimated Average Requirements.
2. **Adequate Intakes (AI)**
Nutrient intake goals for healthy individuals, derived from the Estimated Average Requirements. Set when insufficient scientific data is available to establish the RDA value.
3. **Tolerable Upper Intake Levels (UL)**
Suggested upper limits of intakes for nutrients that may be toxic at excessive levels. When consumed at excessive levels, these nutrients are likely to cause illness.
4. **Estimated Average Requirements (EAR)**
An Estimated Average Requirement (EAR) is the average daily nutrient intake level estimated to meet the requirements of half of the healthy individuals in a specific population group.

Dietary Guidelines

The DRIs refer to specific nutrients that are recommended to ensure optimal health and dietary adequacy. **Dietary Guidelines** have been developed by the USDA that translate nutrients into general recommendations about the foods that should be consumed and/or limited. Health officials today are as concerned about overnutrition (excesses of nutrients) as they are about undernutrition. The Dietary Guidelines emphasize that sensible choices in the diet can promote health and reduce the risk for chronic diseases such as heart disease, certain cancers, diabetes, stroke, and osteoporosis, which are some of the leading causes of death and disability among Americans. Although many guidelines have stressed the importance of variety in the diet, a shift to also include fitness reflects the results of recent research conducted on the problem of overweight and obese individuals in the United States.⁶ The Dietary Guidelines for Americans were first released in 1980, jointly published by the U.S. Department of Agriculture (USDA) and the U.S. Department of Health and Human Services (HHS). Secretaries of the USDA and HHS are required to jointly publish a report on the Dietary Guidelines for Americans at least every five years.

The recently released 2015 Dietary Guidelines for Americans continue to make recommendations utilizing the most recent scientific knowledge in promoting health and preventing chronic diseases for current and future generations. A focus of the current guidelines is on the importance of healthy eating patterns as a whole and the way that an array of foods and beverages act together to affect health. The guidelines recognize that the U.S. population is now faced with the cumulative effects of poor eating and physical activity patterns. As a result of these unhealthy practices, approximately 117 million Americans have one or more preventable chronic diseases such as cardiovascular disease, hypertension, type 2 diabetes, some cancers, and poor bone health. The high rates of overweight and obesity in more than two thirds of adults and approximately one third of children and youth have contributed to many of these health risks and diseases.

The five general 2015 Dietary Guidelines and Key Recommendations are included in Table 2.3. A picture of the 2015 Dietary Guidelines brochure is found in Figure 2.1.⁷

TABLE 2.3 The 2015-2020 Dietary Guidelines and Key Recommendations**The Guidelines**

1. Follow a healthy eating pattern across the lifespan. All food and beverage choices matter. Choose a healthy eating pattern at an appropriate calorie level to help achieve and maintain a healthy body weight, support nutrient adequacy, and reduce the risk of chronic disease.
2. Focus on variety, nutrient density, and amount. To meet nutrient needs within calorie limits, choose a variety of nutrient-dense foods across and within all food groups in recommended amounts.

(Continued)

TABLE 2.3 The 2015-2020 Dietary Guidelines and Key Recommendations (continued)

<p>3. Limit calories from added sugars and saturated fats and reduce sodium intake. Consume an eating pattern low in added sugars, saturated fats, and sodium. Cut back on foods and beverages higher in these components to amounts that fit within healthy eating patterns.</p>
<p>4. Shift to healthier food and beverage choices. Choose nutrient-dense foods and beverages across and within all food groups in place of less healthy choices. Consider cultural and personal preferences to make these shifts easier to accomplish and maintain.</p>
<p>5. Support healthy eating patterns for all. Everyone has a role in helping to create and support healthy eating patterns in multiple settings nationwide, from home to school to work to communities.</p>
<p>Key Recommendations</p> <p>The Dietary Guidelines' Key Recommendations for healthy eating patterns should be applied in their entirety, given the interconnected relationship that each dietary component can have with others.</p> <p>Consume a healthy eating pattern that accounts for all foods and beverages within an appropriate calorie level.</p> <p>A healthy eating pattern includes:^[1]</p> <ul style="list-style-type: none"> ▪ A variety of vegetables from all of the subgroups—dark green, red and orange, legumes (beans and peas), starchy, and other ▪ Fruits, especially whole fruits ▪ Grains, at least half of which are whole grains ▪ Fat-free or low-fat dairy, including milk, yogurt, cheese, and/or fortified soy beverages ▪ A variety of protein foods, including seafood, lean meats and poultry, eggs, legumes (beans and peas), and nuts, seeds, and soy products ▪ Oils <p>A healthy eating pattern limits:</p> <ul style="list-style-type: none"> ▪ Saturated fats and trans fats, added sugars, and sodium <p>Key Recommendations that are quantitative are provided for several components of the diet that should be limited. These components are of particular public health concern in the United States, and the specified limits can help individuals achieve healthy eating patterns within calorie limits:</p> <ul style="list-style-type: none"> ▪ Consume less than 10 percent of calories per day from added sugars^[2] ▪ Consume less than 10 percent of calories per day from saturated fats^[3] ▪ Consume less than 2,300 milligrams (mg) per day of sodium^[4] ▪ If alcohol is consumed, it should be consumed in moderation—up to one drink per day for women and up to two drinks per day for men—and only by adults of legal drinking age.^[5] <p>In tandem with the recommendations above, Americans of all ages—children, adolescents, adults, and older adults—should meet the <i>Physical Activity Guidelines for Americans</i> to help promote health and reduce the risk of chronic disease. Americans should aim to achieve and maintain a healthy body weight. The relationship between diet and physical activity contributes to calorie balance and managing body weight. As such, the <i>Dietary Guidelines</i> includes a Key Recommendation to meet the <i>Physical Activity Guidelines for Americans</i>.^[6]</p>

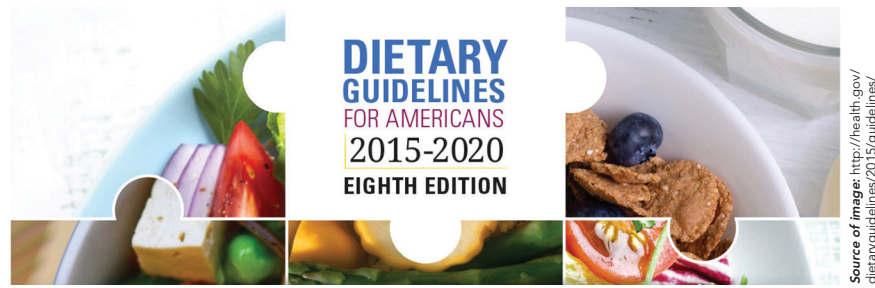


FIGURE 2.1 2015–2020 Dietary Guidelines Brochure

Overall Nutrition Goals for the Nation

As discussed in chapter one, the nutritional status of the U.S. population is determined by evaluating information received from government surveys under the auspices of the National Nutrition Monitoring and Related Research Act of 1990. The data obtained is being used to measure the Nation's progress in implementing the recommendations of the Dietary Guidelines for Americans and to determine if the objectives of the Healthy People 2010 were met. This 10-year plan was developed by the United States Department of Health and Human Services (HHS) to establish healthy objectives for the nation. The initiative addresses the proportion of the population that consumes a specified level of particular foods and/or nutrients, and the average amount of food eaten by population groups. Objectives may target areas such as undernutrition, including iron deficiency, growth retardation, and food security.⁸ **The Healthy People 2020** document presents new objectives based on strong science that supports the health benefits of eating a healthful diet and maintaining a healthy body weight. The goals encompass the importance of increasing household food security and eliminating hunger. Table 2.4 provides a sample list of nutrition objectives outlined in the Healthy People 2020 document.^{9, 10}

TABLE 2.4 Sample Nutrition Objectives from the Healthy People 2020

- Increase the number of states with nutrition standards for foods and beverages provided to preschool-aged children in child care.
- Increase the proportion of schools that offer nutritious foods and beverages outside of school meals.
- Increase the proportion of schools that do not sell or offer calorically sweetened beverages to students.
- Increase the number of states that have state-level policies that incentivize food retail outlets to provide foods that are encouraged by the Dietary Guidelines.
- Increase the proportion of school districts that require schools to make fruits or vegetables available whenever other food is offered or sold.
- Increase the proportion of primary care physicians who regularly assess body mass index (BMI) for age and sex in their child or adolescent patients.
- Increase the proportion of Americans who have access to a food retail outlet that sells a variety of foods that are encouraged by the **Dietary Guidelines for Americans**.
- Increase the proportion of worksites that offer nutrition or weight management classes or counseling.
- Increase the proportion of physician office visits that include counseling or education related to nutrition or weight.
- Reduce the proportion of children and adolescents who are considered obese.
- Reduce the proportion of adults who are obese.
- Increase the contribution of total vegetables to the diets of the population aged 2 years and older.

- Increase the variety and contribution of vegetables to the diets of the population aged 2 years and older.
- Increase the contribution of fruits to the diets of the population aged 2 years and older.
- Reduce household food insecurity and, in so doing, reduce hunger.
- Reduce consumption of calories from solid fats and added sugars in the population aged 2 years and older.
- Increase the contribution of whole grains to the diets of the population aged 2 years and older.
- Reduce consumption of saturated fat in the population aged 2 years and older.
- Reduce iron deficiency among young children and females of childbearing age.
- Reduce consumption of sodium in the population aged 2 years and older.
- Increase consumption of calcium in the population aged 2 years and older.

<http://health.gov/dietaryguidelines/2015/guidelines/>

Obtaining Nutrition Information

In order to make recommendations for the population, or for an individual, it is necessary to gather data. Methods that may be employed include: administering surveys, conducting interviews and gathering medical records. One of the most effective means of gathering information is the use of the National Health and Nutrition Examination Survey (NHANES), conducted by Center of Disease Control's National Center for Health Statistics. The NHANES process is designed to assess the health and nutritional status of adults and children in the United States. This comprehensive survey combines personal interviews with standardized physical examinations, diagnostic procedures, and lab tests on approximately 5,000 persons each year. Fifteen counties across the country are visited each year to assess and interview individuals. They are interviewed on the following topics; demographics, socioeconomics, dietary, and health-related questions. The examination component is administered by highly trained medical personnel and includes medical, dental, physiological measurement, and lab tests.

Additional questions address health history and food intake. The diseases, medical conditions, and health indicators studied include:

- Respiratory disease
- Obesity
- Anemia
- Oral health
- Diabetes
- Osteoporosis
- Eye diseases
- Physical fitness and physical functioning
- Hearing loss
- Kidney disease
- Nutrition
- Vision
- Cardiovascular Disease
- Environmental Exposures
- Infectious Diseases
- Reproductive History and Sexual Behavior
- Sexually Transmitted Diseases

This compilation of information is an extremely comprehensive analysis of the health and well-being of the American population. The data is then reviewed and a list of recommendations is submitted. Examples of the data collected from the NHANES 1999-2016 resulted in the following conclusions:

- Overweight prevalence data has led to the proliferation of programs in emphasizing diet and exercise. It has also stimulated additional research and a means to track trends in obesity.
- Data continues to indicate undiagnosed diabetes. As a result this has stimulated government and private agencies to increase public awareness especially among minority populations.
- Information in the survey will help the Food and Drug Administration decide if there is a need to change the vitamin and mineral fortification regulations of the Nation's Food supply.
- NHANES data continues to steer education and prevention programs to reduce hypertension and cholesterol levels, and to measure the success in curtailing risk factors with the Nations' number one cause of death, cardiovascular disease.

The importance of gathering data, and carefully reviewing it, is imperative to the future health and wellness of the Nation. Gathering this data is not often easy. One of the main obstacles in this process is the reliability of the individuals who are recording the information.¹¹

Food Composition Tables

Nutrient Composition Tables, also known as **Food Composition Tables**, provide numerical data on nutrients found in foods. Laboratory analysis must be completed on each food to derive this data. The USDA has compiled data on a large number and variety of foods, which is published through the USDA in Agriculture Handbook 8, Composition of Foods: Raw, Processed, Prepared. The USDA Nutrient Data Base for Standard Reference also provides this information. Approximate nutrient components such as energy value, proteins, carbohydrates, fats, minerals, and vitamins are included.¹² Numerous other computer programs on nutrient data also exist. Nutrition Composition Tables are useful in analyzing dietary intakes to determine if the consumption of nutrients is adequate. Chefs can utilize these tables to gain information on the approximate nutritional analysis of the recipes and menus they serve. A sampling of this database can be seen in Table 2.4A.

Table 2.4A Nutritive Value of the Edible Part of Food

Food No.	Food Description	Measure of Edible Portion	Weight (g)	Water (%)	Calories (kcal)	Protein (g)	Total Fat (g)	Fatty Acids		
								Saturated (g)	Mono-unsaturated (g)	Poly-unsaturated (g)
Dairy Products (continued)										
	Yogurt (continued)									
	Without added milk solids									
138	Made with whole milk, plain..	8-oz	227	88	139	8	7	4.8	2.0	0.2
		container								
139	Made with nonfat milk, low calorie sweetener, vanilla or lemon flavor.....	8-oz	227	87	98	9	Tr	0.3	0.1	Tr
		container								
Eggs										
	Egg									
	Raw									
140	Whole	1 medium.....	44	75	66	5	4	1.4	1.7	0.6
141		1 large.....	50	75	75	6	5	1.6	1.9	0.7

142		1 extra large.....	58	75	86	7	6	1.8	2.2	0.8
143	White	1 large.....	33	88	17	4	0	0.0	0.0	0.0
144	Yolk	1 large.....	17	49	59	3	5	1.6	1.9	0.7
	Cooked, whole									
145	Fried, in margarine, with salt ...	1 large.....	46	69	92	6	7	1.9	2.7	1.3
146	Hard cooked, shell removed ..	1 large	50	75	78	6	5	1.6	2.0	0.7
147		1 cup,	136	75	211	17	14	4.4	5.5	1.9
		chopped								
148	Poached, with salt	1 large.....	50	75	75	6	5	1.5	1.9	0.7
149	Scrambled, in margarine, with whole milk, salt	1 large.....	61	73	101	7	7	2.2	2.9	1.3
150	Egg substitute, liquid	1/4 cup.....	63	83	53	8	2	0.4	0.6	1.0
Fats and Oils										
	Butter (4 sticks per lb)									
151	Salted	1 stick.....	113	16	813	1	92	57.3	26.6	3.4
152		1 tbsp.....	14	16	102	Tr	12	7.2	3.3	0.4
153		1 tsp.....	5	16	36	Tr	4	2.5	1.2	0.2
154	Unsalted	1 stick.....	113	18	813	1	92	57.3	26.6	3.4
155	Lard.....	1 cup.....	205	0	1,849	0	205	80.4	92.5	23.0
156		1 tbsp.....	13	0	115	0	13	5.0	5.8	1.4
	Margarine, vitamin A-fortified, salt added									
	Regular (about 80% fat)									
157	Hard (4 sticks per lb).....	1 stick.....	113	16	815	1	91	17.9	40.6	28.8
158		1 tbsp.....	14	16	101	Tr	11	2.2	5.0	3.6
159		1 tsp.....	5	16	34	Tr	4	0.7	1.7	1.2
160	Soft	1 cup.....	227	16	1,626	2	183	31.3	64.7	78.5
161		1 tsp.....	5	16	34	Tr	4	0.6	1.3	1.6
	Spread (about 60% fat)									
162	Hard (4 sticks per lb).....	1 stick.....	115	37	621	1	70	16.2	29.9	20.8
163		1 tbsp.....	14	37	76	Tr	9	2.0	3.6	2.5
164		1 tsp.....	5	37	26	Tr	3	0.7	1.2	0.9
165	Soft	1 cup.....	229	37	1,236	1	139	29.3	72.1	31.6
166		1 tsp.....	5	37	26	Tr	3	0.6	1.5	0.7
167	Spread (about 40% fat).....	1 cup.....	232	58	801	1	90	17.9	36.4	32.0
168		1 tsp.....	5	58	17	Tr	2	0.4	0.8	0.7

Food Labels

Another tool or standard used to assist both members of the public and health professionals in meeting dietary guidelines and recommendations is the **Food Label**. Food labels offer complete, useful, and accurate information that can assist consumers in choosing the nutrients to include or limit in their diet. The Nutrition Labeling and Education Act of 1990 (NLEA), which was implemented by the Food and Drug Administration of the Department of Health and Human Services, requires labeling of most foods (except meat, fish and and poultry), and authorizes the use of nutrient claims and appropriate FDA-approved claims. Nutrition information is available for many raw foods including the 20 most eaten raw fruits, vegetables, fish, and the 45 best-selling cuts of meat. A 1996 survey by the FDA found that more than 70% of U.S. stores were in compliance with this law. Restaurant menu items may require nutrition labeling if a health or nutrient-content claim is made. The NLEA does not require nutrition labeling in the following cases:

- Food served for immediate consumption (for example cafeteria food and food vendor products)
- Ready to eat food prepared on site (for example bakery and deli items)
- Food shipped in bulk
- Plain coffee, tea, and spices

Requirements on the Food Label

Food labels must be uniform in the United States and contain the following information:

- The usual or common name of the product
- The name and address of the manufacturer, and the date “to be sold by”
- The net contents or weight, and quantities of specified nutrients and food constituents
- The ingredients in descending order by weight
- The serving size and number of servings per container

Nutrition Information

Under the label’s “**Nutrition Facts**” panel, which appears in bold black letters, manufacturers are required to provide information on certain nutrients that are in their product. The panel provides an easy-to-read format that allows consumers to quickly find the information they need to make healthy food choices. When looking at the Nutrition Facts it is helpful to read the label in the order listed below to determine the nutritional content of the product.

1. Serving Size/Servings per container

When looking at the Nutrition Facts label, start by looking at the serving size and number of servings per container. These are listed in standardized familiar units such as cups and ounces followed by the metric amount in grams.

2. Calories and Calories from fat

Examine how many calories are provided in one serving of the product, as well as the calories that are derived from fat.

3. The Nutrients

The Nutrient section on the label includes some of the key nutrients that may have an impact on your health.

Limit these nutrients:

Total Fat
Saturated Fat
Trans Fat
Cholesterol
Sodium

Get enough of these nutrients:

Dietary fiber
Vitamin A
Vitamin C
Calcium
Iron

4. The Percent Daily Value

The * symbol is used after the heading % Daily Value. This refers to the Footnote in the lower part of the nutrition label and includes the % Daily Values. The Percent Daily Values are based on the daily value recommendations for key nutrients for a 2000 calorie diet. The % Daily Value helps to determine if a serving of food is high or low in a nutrient. 5% DV or less is low for nutrients, and 20% DV or more is high.

Figure 2.2 provides a sample panel that highlights and explains the information on the Original Nutrition Facts panel of the food label.¹³

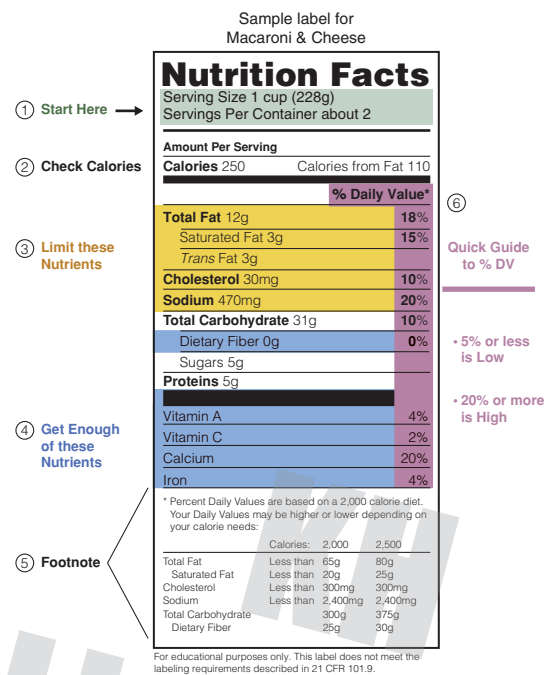


FIGURE 2.2 Original Nutrition Facts Panel of the Food Label

New Rules for Updating the Nutrition Facts Label

In March of 2014, July of 2015, and then most recently May 2016, The Food and Drug Administration issued supplemental new rules for updating the Nutrition Facts Label. Manufacturers will have until 2018 to comply with the changes. A summary of the changes include the following:

1. A greater understanding of Nutrition Science
 - Required information about added sugars
 - Updated daily values for nutrients like sodium, dietary fiber and Vitamin D
 - Require manufacturers to declare the gram amount of Potassium and Vitamin D on the label in addition to the existing %Daily Value(DV)
 - Calcium and iron continue to be required, Vitamins A and C can be included on a voluntary basis
 - “Total Fat”, “Saturated Fat”, and “Trans Fat”, will continue to be required but “Calories from Fat” will be removed since research shows the type of fat is more important than the amount
2. Updated Serving Size Requirement
 - Serving size requirements are changed to reflect how people eat and drink today not what they “should” eat
 - Packaged foods, including drinks that are typically eaten in one sitting, must be labeled as a single serving and the calorie and nutrient information must be declared for the entire package
 - Packages that are larger and could be consumed in one sitting or multiple sittings must provide dual column labels which indicate “per serving” and “per package” calories and nutrient information
3. Refreshed Design
 - Make Serving sizes and Calories more prominent to emphasize parts of the label that are important in addressing current public health issues
 - The Percent Daily Value (%DV) is shifted to the left so it comes first

Figure 2.2A shows a comparison of the current Nutrition Facts Panel to the new one. Figure 2.2B illustrates the need to educate on serving sizes.¹⁴

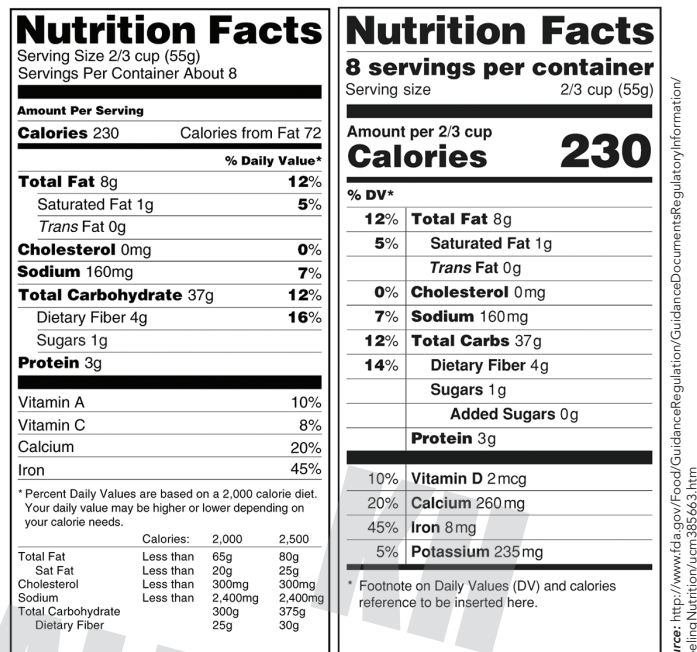


FIGURE 2.2A Original Nutrition Facts Panel vs New



FIGURE 2.2B Serving sizes get a reality check

Health Claims on Food Labels

The FDA has identified the relationship between some nutrients and their positive impact on health. These claims may often be seen on food packages. There are three different categories of claims that can be used on food and dietary supplement labels. The categories are nutrient content claims, health claims and structure/function claims. The FDA and the Federal Trade Commission are responsible for ensuring the validity of these claims. The nutrient content claim describes the level of a nutrient or dietary substance in the product. Terms such as free, low, reduced, lite, more, and high are used when comparing the level of a nutrient in a food to that of another food. The terms must meet requirements that are consistent for all types of foods. Calorie-free products for example, must always be less than 5 calories/serving, while a product that is high in fiber must be 5 grams or more/serving. Health claims on a food label describe the relationship between a food, food component, or dietary supplement ingredient, and their potential for reducing the risk of a disease or health-related condition. Examples of approved health claims and their requirements can be seen in Table 2.5. The final claim refers to the structure/function, and is found on the labels of conventional foods, dietary supplements, and some drugs, to describe the role of a nutrient or dietary ingredient intended to affect normal structure or function in humans. Examples of structure function claims include; “calcium builds strong bones” and “antioxidants maintain cell integrity.” The manufacturer is responsible for the validity of such a claim, and a disclaimer must be included on the label stating that the FDA has not evaluated the claim.^{15, 16}

TABLE 2.5 Examples of Claims on Food Labels

Health Claim	Nutrient Claim	Label Claim
Calcium and Osteoporosis	High in calcium (20% or more of Daily Value)	Regular exercise and a healthy diet with enough calcium helps teens and young adult white and Asian women maintain good bone health and may reduce their high risk of osteoporosis later in life.
Sodium and Hypertension	Low sodium (140 milligrams or less)	Diets low in sodium may reduce the risk of high blood pressure, a disease associated with many factors.
Dietary Fat and Cancer	Low fat (3 grams of fat or less)	Development of cancer depends on many factors. A diet low in total fat may reduce the risk of some cancers.
Folate and Neural Tube Defects	Good source of folate (at least 40 micrograms) delete	Healthful diets with adequate folate may reduce a woman's risk of having a child with a brain or spinal cord defect.
Soy Protein and Risk of Coronary Heart Disease	At least 6.25 grams of soy protein. Low saturated fat (1 gram or less-no more than 15% of calories) Low cholesterol (10 milligrams or less) Low fat (3 grams or less)	25 grams of soy protein, as part of a diet low in saturated fat and cholesterol, may reduce the risk of heart disease. A serving of (name of food) supplies ____ grams of soy protein.

Food Allergies and the Food Label

The Food and Drug Administration (FDA) in the United States requires food manufacturers to list the most common food allergens. These include: milk, eggs, peanuts, tree nuts, fish, shellfish, soy, and wheat. The Food Allergen Labeling and Consumer Protection Act of 2004 (FALCPA) is a law that applies to all foods whose labeling is regulated by

FDA, both domestic and imported. The labeling must be in a simplified form so older children are able to understand the information. The food label must list the type of allergen as well as any ingredient in the product that contains a protein derived from one of the above listed food allergens. This also includes allergens that can be found in additives including flavorings and colors. A food manufacturer only needs to state the food allergen in that product. FALCPA's labeling requirements do not apply to the potential or unintentional presence of major food allergens in foods resulting from cross-contamination from a manufacturing plant that processes other products that contain a food allergen. Cross-contamination may be problematic for individuals who exhibit severe allergic reactions to an allergen. Most manufacturers will voluntarily include an advisory statement such as "this product was manufactured in a plant that also processes wheat."¹⁷

Organic Products and the Food Label

There are a variety of reasons consumers purchase organic foods. These include concerns about the effects of conventional farming practices on the environment, animal welfare and the belief that organic products taste better and are more healthful than conventional foods. A review of the current literature suggests that organic foods are not more nutritious than conventional foods. It has been found that organic foods may reduce exposure to pesticide residues and antibiotic-resistant bacteria.¹⁸

In order for a food or other agricultural product to be labeled organic it must have been produced through approved methods. The methods used must involve the integration of biological, cultural and mechanical practices that promote cycling of resources and ecological balance, and conserve biodiversity. Additional requirements by the USDA include prohibiting the use of synthetic fertilizers, sewerage sludge, irradiation, and genetic engineering.

In the United States the National Organic Program regulates all organic crops, livestock, and agricultural products. They are certified to the United States Department of Agriculture (USDA) organic standards. The USDA organic seal as shown in Figure 2.3 ensures that the product is certified organic and has 95% or more organic content.

There are additional voluntary labels for livestock products which include meat and eggs. The use of animal raising claims must be truthful and not misleading. Examples include:

- **Cage-free:** In order for this label to be used the flock must be able to freely roam a building, room or enclosed area. They must have unlimited access to food and fresh water during their production cycle.
- **Free-range:** This label may be used when the flock was provided with shelter in a building, room, or area. They must have unlimited access to food and fresh water during their production cycle and have continuous access to the outdoors.
- **Natural:** Meat, poultry, and egg products that are labeled "natural" must be minimally processed and contain no artificial ingredients. This does not pertain to any standards regarding the farm practices.
- **Grass-fed:** The use of this label requires that grass-fed animals receive a majority of their nutrients from grass throughout their life. This is different from animals that may have their diets supplemented with grain. Meat products that are labeled as grass-fed organic may also add the "natural" label if they contain no artificial ingredients.¹⁹



FIGURE 2.3 The USDA Organic Seal

Food Guide Pyramid

It is often difficult to assess the recommended nutrient amounts of actual foods and meals that one should consume. Standards are developed to help make the transition between recommendations and that which should actually be consumed in a healthy diet.

The **Food Guide Pyramid**, which was developed by the USDA is widely used to make good food choices. The original food guide pyramid was developed in 1992 as an educational tool used to help Americans select healthful diets. The 6th edition of the pyramid, entitled MyPyramid, was released in 2005 by the U.S. Department of Agriculture. MyPyramid translates the concepts of the 2005 Dietary Guidelines for Americans to assist consumers in making healthier food and physical activity choices. The pyramid includes a motivational symbol and slogan, “Steps to a Healthier You” as seen in Figure 2.4. In the MyPyramid graphic the color bands represent the various food groups needed each day for health. As illustrated in Figure 2.4, the orange band represents grains, the green for vegetables, the red for fruit, blue for milk, purple for meat and beans, and yellow for oils. The width of the colored bands also varies to suggest the quantity of food that should be eaten from each group. The pyramid also reminds consumers to include physical activity choices every day.

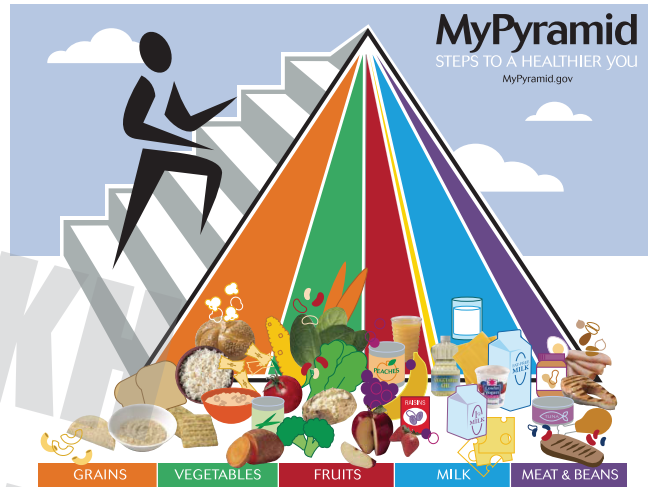


FIGURE 2.4 The U.S. Food Guide Pyramid

Data from the Dietary Reference Intakes and from the USDA’s Agricultural Research Service, on the nutritional content of foods and on food consumption patterns, was used to update food intake patterns used in the MyPyramid plan. The daily food intake patterns identify the amount of product to consume from each group and subgroup at a variety of energy levels.²⁰

ChooseMyPlate

In June of 2011 the U.S. Department of Agriculture unveiled “ChooseMyPlate” the most simplified and user-friendly chart of dietary guidelines developed to date. This newly designed icon was created to appeal to a more extensive audience and to encourage greater participation in healthy eating in order to reduce the ever-increasing obesity rate in the U.S.

The new symbol consists of a circular plate accompanied by a smaller circle (representing a glass), found on the top right hand side of the plate. The plate is divided into 4 sections representing 4 food groups: (1) Vegetables (in green) make up the largest sector of the plate; (2) Fruits (in red); (3) Grains (in orange) made up of whole grains, refined grains and other carbohydrates; and (4) Proteins (in purple) consisting of meats, fish, poultry, eggs, beans, peas, nuts, and seeds. Together fruits and vegetables represent half of the plate. The fifth group (5) in the small blue circle is the dairy group, which may include a glass of fat-free or low-fat milk or a cup of yogurt.

The ChooseMyPlate icon can be seen in Figure 2.4a. The plate visual is easy to understand and includes fruit, vegetable, grains, and protein and dairy groups. Figure 2.5 identifies sample portion sizes for each of these food groups.

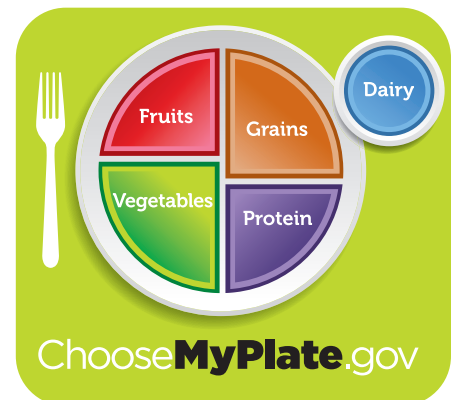


FIGURE 2.4A The USDA ChooseMyPlate icon

FIGURE 2.5 Sample portion sizes used in ChooseMyPlate Food Groups**Grains**

What is the quantity needed of each item shown in the grains group to ultimately provide 1 ounce of grains?

In general, 1 slice of bread, 1 cup of ready-to-eat cereal, or $\frac{1}{2}$ cup of cooked rice, cooked pasta, or cooked cereal can be considered a 1 ounce equivalent from the grains group.



Morgan Lane Photography/Shutterstock.com

Dairy

What quantity of the items shown in the dairy group is needed to equal 1 cup of dairy product?

In general, 1 cup of milk or yogurt, $1\frac{1}{2}$ ounces of natural cheese, or 2 ounces of processed cheese can be considered as 1 cup from the dairy group.



Valentyn Volkov/Shutterstock.com

Vegetables

What is the quantity of each vegetable needed to equal a cup of vegetables?

In general, 1 cup of raw or cooked vegetables or vegetable juice, or 2 cups of raw leafy greens can be considered as 1 cup from the vegetable group.



Taiga/Shutterstock.com

Proteins

What is the quantity needed of the foods in this food group to produce an ounce of protein?

In general, 1 ounce of meat, poultry or fish, $\frac{1}{4}$ cup cooked dry beans, 1 egg, 1 tablespoon of peanut butter, or $\frac{1}{2}$ ounce of nuts or seeds can be considered as 1 ounce equivalent from the protein foods group.



Gabriela Duran/Shutterstock.com

Fruits

Which foods in the fruit group can provide the equivalent of 1 cup of fruit?

In general, 1 cup of fruit or 100% fruit juice, or $\frac{1}{2}$ cup of dried fruit can be considered as 1 cup from the fruit group.



Oils

How does one assess oil intake?

A teaspoon of oil is a serving. A person's allowance for oils depends on their age, sex, and level of physical activity.



Selected consumer messages focus on 3 key categories. The first category consists of balancing calories. This message encourages enjoying food but eating less and avoiding oversized portions. The second consumer message involves the foods to increase. Recommendations in this area include filling half your plate with fruits and vegetables, consuming half the prescribed quantity of grains in the form of whole grains and drinking fat-free or low-fat milk. The last consumer message deals with reducing certain nutrients. It encourages comparing food labels to identify lower sodium items and drink water in place of sugary drinks.

Information on ChooseMyPlate can be found at www.ChooseMyPlate.gov. This web-based interactive tool allows consumers to receive a personalized set of appropriate recommendations based on age, sex, and physical activity levels. Information and tips to help follow the recommendations are also provided.²¹

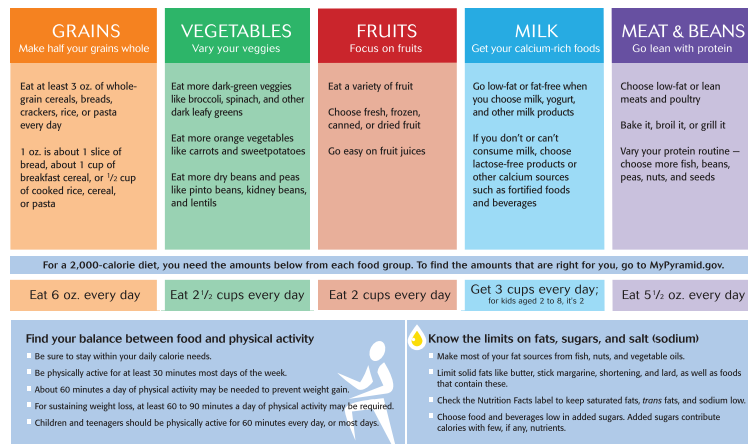
The development of the Healthy U.S.-Style Pattern is based on type and proportion of food Americans typically consume, but included are the more nutrient-dense forms and appropriate amounts. The pattern is designed to meet a person's nutrient needs yet not exceeding caloric requirements. The use of current food consumption data is used to determine the mix and proportions of foods to include in each group. The most current food composition data is also used to select a nutrient-dense sampling for each food.

The amounts of each food group (and subgroup) are adjusted when needed to meet nutrient and Dietary Guidelines standards while staying within the limits for calories and over-consumed dietary components. Standards for nutrient adequacy aim to meet the Recommended Dietary Allowances (RDA), which are designed to cover the needs of 97 percent of the population, and Adequate Intakes (AI), which are used when an average nutrient requirement cannot be determined. The Healthy US-Style Patterns meet these standards for most nutrients, exceptions being Vitamin D and E, potassium and choline. In most cases, an intake of these particular nutrients below the RDA or AI is not considered to be of public health concern.

The Healthy U.S.-Style Pattern includes 12 calorie levels to meet the needs of individuals across the lifespan. To follow this Pattern, first identify the appropriate calorie level, then choose a variety of foods in each group and subgroup in the recommended amounts, and, lastly, limit the choices that are not in nutrient-dense forms so that the overall calorie limit is not exceeded. The recommended amounts from each group for a 2000 calorie level can be found in Figure 2.6.²²

TABLE 2.6 Samples of the Healthy Mediterranean-Style and Vegetarian Eating Patterns

Food Group	Healthy Mediterranean-Style Eating Pattern	Healthy Vegetarian Eating Pattern
Vegetables	2½ c-eq/day	2½ c-eq/day
Dark green	1½ c-eq/week	1½ c-eq/week
Red and orange	5½ c-eq/week	5½ c-eq/week
Legumes (beans and peas)	1½ c-eq/week	3 c-eq/week ^c
Starchy	5 c-eq/week	5 c-eq/week
Other	4 c-eq/week	4 c-eq/week
Fruits	2½ c-eq/day	2 c-eq/day
Grains	6 oz-eq/day	6½ oz-eq/day
Whole grains	≥3 oz-eq/day	≥3½ oz-eq/day
Refined grains	≤3 oz-eq/day	≤3 oz-eq/day
Dairy	2 c-eq/day	3 c-eq/day
Protein Foods	6½ oz-eq/day	3½ oz-eq/day ^c
Seafood	15 oz-eq/week ^d	-
Meats, poultry, eggs	26 oz-eq/week	3 oz-eq/week (eggs)
Nuts, seeds, soy products	5 oz-eq/week	14 oz-eq/week
Oils	27 g/day	27 g/day
Limit on Calories for Other Uses (% of calories)	260 kcal/day (13%)	290 kcal/day (15%)



U.S. Department of Agriculture
Center for Nutrition Policy and Promotion
April 2005
CNP-15



FIGURE 2.6 Sample 2000 Calorie Plan from ChooseMyPlate.gov

Cultural Adaptations to the Food Guide Pyramid

Cultural Adaptations may be made to the Food Guide Pyramid to reflect cultural and ethnic food choices. These can include influences such as Asian, Mexican, and Latino foods. One of the more popular adaptations to the Food Guide Pyramid is the **Mediterranean Pyramid**.

The Mediterranean region encompasses a large geographical area that includes the countries of Spain, Portugal, Southern France, Syria, Israel and many other nations as well. Although the cuisine in these regions varies, many characteristics in their composition are similar. Foods from this region are commonly low in saturated fats and high in monounsaturated fats, in particular their olive oil content. Dishes are low in meat and meat products, while high in fruits, vegetables, legumes, and grains (including bread). There is also moderate consumption of milk, milk products, and alcohol. Figure 2.7 explains how to follow the Mediterranean diet.

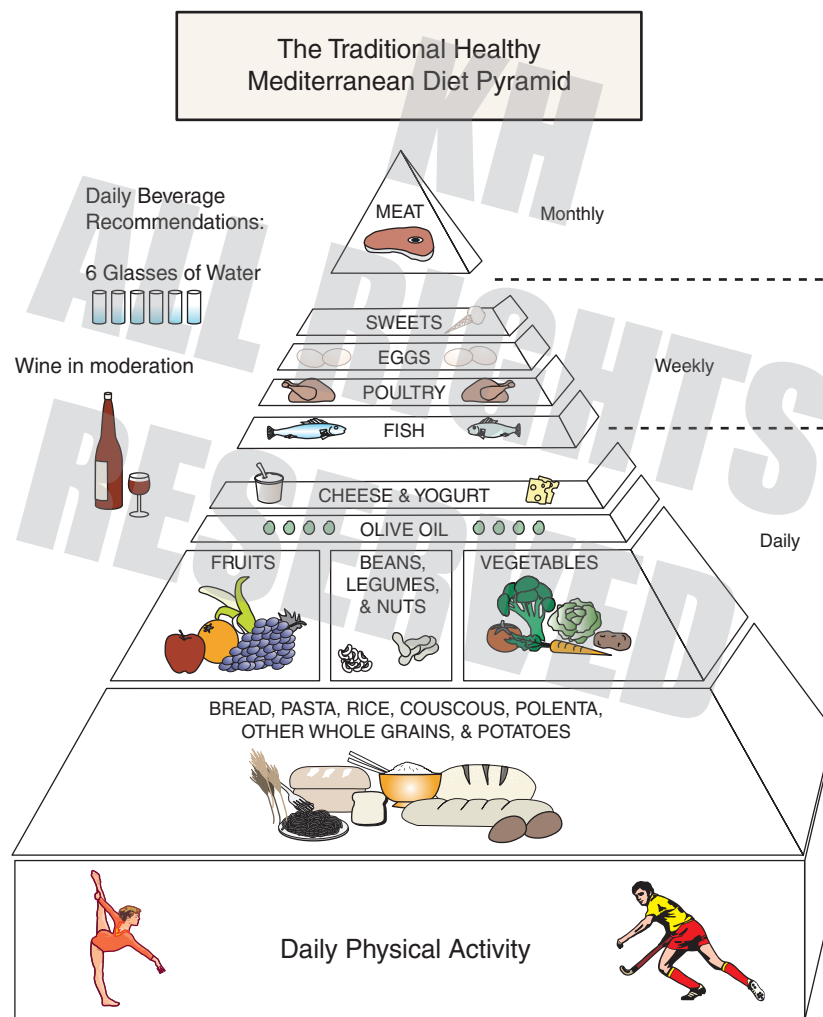


FIGURE 2.7 The Mediterranean Food Guide Pyramid

The Healthy Mediterranean-Style Pattern has been adapted from the Mediterranean Pyramid and the Healthy US-Style Pattern to better reflect dietary habits in the US and the health benefits associated with the Mediterranean Diet. The Healthy Mediterranean-Style Pattern contains more fruits and seafood and less dairy than does the Healthy U.S.-Style Pattern. The amounts of oils in the Pattern were not changed since the Healthy U.S.-Style Pattern already contains an amount that is similar to the amount associated with positive health outcomes, and are also higher than typical intakes in the United States. The amount of meat and poultry in the Healthy U.S.-Style Pattern

are lower than the typical intake in the United States and yet similar to amounts associated with positive health outcomes. Nutrient content is comparable to the Healthy US-Style Pattern with the exception of calcium and vitamin D because of the lower dairy intake in the Healthy Mediterranean-Style pattern.

Another variation of the U.S. Food Guide Pyramid is the Vegetarian Pyramid, which assists vegetarians in obtaining a healthy, balanced diet. The sections of the pyramid include at the base; fruits and vegetables, whole grains, legumes and beans; in the middle nuts and seeds, eggs, soy milk and dairy, and plant oils; and at the top eggs and sweets. Dietary data from vegetarians across the world that enjoyed the lowest recorded rates of chronic diseases and the highest adult life expectancy show a pattern similar to the one illustrated in the list below:

1. Multiple daily servings of foods from fruits, vegetables, whole grains, legumes, and beans.
2. Daily servings from nuts, seeds, plant oils, soy milk, and dairy.
3. Occasional or small quantity servings from eggs and sweets.
4. Attention to consuming a variety of foods from all sections of the pyramid.
5. Daily consumption of enough water throughout the day to assure good health.
6. Regular physical activity at a level which promotes healthy weight, fitness, and well-being.
7. Reliance upon whole foods and minimally processed foods in preference to highly-processed foods.
8. Moderate regular intake of alcoholic beverages such as wine, beer, or spirits (optional).
9. Daily consumption of unrefined plant oils.
10. Dietary supplements as necessary, based upon factors such as age, sex, and lifestyle, with special attention to those avoiding dairy and/or eggs.

The Healthy Vegetarian Pattern is derived from the Healthy U.S.-Style Pattern, yet modifies the amount recommended from some of the food groups to more closely reflect eating patterns that have been reported by vegetarians in the National Health and Nutrition Examination Survey (NHANES). The development of the Healthy Vegetarian Pattern is therefore based on evidence of the foods and amounts consumed by vegetarians, with the addition of meeting the same nutrient and Dietary Guidelines standards as the Healthy U.S.-Style Pattern. Based on a comparison of the food choices of these vegetarians to non-vegetarians in NHANES, amounts of soy products (particularly tofu and other processed soy products), legumes, nuts and seeds, and whole grains were increased, and meat, poultry, and seafood were eliminated. Dairy and eggs were included because they were consumed by the majority of the vegetarians. To adjust the Pattern to be vegan all dairy choices would be comprised of fortified soy beverages, such as soymilk, or other plant-based dairy substitutes. The Pattern is similar in meeting nutrient standards to the Healthy U.S.-Style Pattern, but somewhat higher in calcium and fiber and lower in vitamin D due to differences in the foods included. Samples of the Healthy Mediterranean-Style and Vegetarian Eating Patterns can be seen in Table 2.6.^{23,24,25}

Choose Your Foods: Food Lists for Diabetes

The Choose Your Foods system was designed by a committee made up of the American Diabetes Association and the Academy of Nutrition and Dietetics.²⁶ Initially designed to assist diabetics needing special diets, the system is based on the principles of good nutrition that apply to everyone. The Choose Your Foods Lists provide estimates of macronutrients (carbohydrate, protein, fat), for each food group. The six Choose Your Foods Lists are Milk, Starch, Fruit, Non-starchy vegetables, Proteins, and Fat. Food amounts that are listed are equal to one choice for that group. The selection of a variety of offerings that are both appealing and diverse can also be made to develop sample daily menus. The Choose Your Foods List menu planning system is used to plan meals for people requiring a nutritionally balanced diet and a specific number of calories. In practice, The Choose Your Foods Lists are used to plan meals for people needing to gain or to lose weight, for athletes who require a high calorie level and for people with diabetes. The Choose Your Foods Lists are found in Appendix B.

Go Ahead and Eat!

Eating is one of life's pleasures that need not be a rigorous exercise in decision-making. Food is meant to be enjoyed, a concept with which chefs are familiar. The wide array of nutritious foods available to consumers allows the choice of healthy foods that taste good. Chefs can have a major impact on the promotion of healthy menus by incorporating ingredients that have sensory qualities. By using health-conscious guides such as ChooseMyPlate, and by incorporating fresh ingredients to prepare healthy nutrient dense meals, chefs can make eating healthy a greater possibility than ever before!

Culinary Corner

Using the Mediterranean Pyramid for Menu Planning

Chefs can utilize a variety of Food Guide Pyramids from around the world when planning menus. A popular trend in today's restaurants is Mediterranean cuisine. Chefs may select the Mediterranean Pyramid as a guide in preparing exciting, healthy menus. Traditional Mediterranean diets are similar in many characteristics. Most are high in fruits and vegetables, and high in grains, potatoes, beans, nuts, and seeds. Olive oil is a primary fat that is included in the daily diet, while low to moderate amounts of dairy are recommended. Fish and poultry are consumed in low to moderate amounts, a few times per week, while the amount of red meat is limited to a few times a month. Eggs, sweets and wine should be consumed in moderate amounts. An abundance of fresh plant food and minimally processed food is also suggested. Physical activity also adds to the effectiveness of this diet.

The Mediterranean diet is higher in fat percentage than that recommended in the U.S. It is important to provide the proper information on the consumption of excess calories in any form to prevent over-consumption of calories leading to weight gain and potential obesity. Although the Mediterranean diet is higher in fat than the American diet, the type of fat is primarily in the form of olive oil, which has been proven to help in preventing and treating heart disease.²⁷ The merits of olive oil are discussed in greater detail in the Culinary Corner of Chapter 5. As long as the calories in the diet are controlled, the Mediterranean diet, although not low fat, may contribute to the prevention and treatment of obesity because of its variety and palatability. The traditional Mediterranean diet reflects dietary patterns found in olive growing areas of the Mediterranean region more than 30 years ago.²⁸ Table 2.7 offers sample menu items from a variety of countries that use the Mediterranean diet.²⁹

TABLE 2.7 Sample Mediterranean Menu Items

Egypt	Falafel (Broad Bean Patties)
Spain	Gazpacho (Cold tomato and vegetable soup)
Tunisia	Oumek Houria (Spicy hot carrots)
Greece	Horiatiki Salata (Greek salad)
Morocco	Tajine Dial Hout (Grouper stew)
France	Fougasse (Fruit Loaf)

(Continued)

Egypt	Koftit Ferakh (Chicken Meatballs)
Cyprus	Salata Pantzaria (Beetroot salad)
Yugoslavia	Rolada Od Spinata (Spinach Roll)
Italy	Risotto Nero (Black Rice)
Algeria	Chorba Loubia Marhiya (Cream of Haricot Bean soup)
Israel	Levivot (Potato Cakes)
Portugal	Carne De Parco Com Ameijoas (Pork with Clams)
Turkey	Paticalnli Pilav (Rice with Aubergines)

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Put It into Practice

Define the Term

Review Figure 2.7, The Mediterranean Food Pyramid, The Culinary Corner “Using the Mediterranean Pyramid for Menu Planning” and Table 2.6, Sample Mediterranean Menu Items. Choose at least five menu items from the Table and place the main ingredients into the correct food group categories on the Mediterranean Diet Pyramid.

Myth vs. Fact

Determine if the following statement is a myth or fact and support your position with evidence from three research articles on the topic. *Statement: “Organic foods are more nutritious than conventional foods.”*

For each research article, summarize each component below.

- A. Abstract
- B. Methods
- C. Results
- D. Discussion
- E. Conclusion

The Menu

Using the “Choose Your Foods Lists for Meal Planning” in Appendix B, design a 1-day meal plan (including portion sizes) for the following:

Breakfast

- 1 fruit choice
- 1 meat choice
- 1 milk choice
- 2 starch choices
- 2 fat choices

Lunch

- 1 fruit choice
- 2 meat choices
- 2 vegetable choices
- 2 starch choices
- 2 fat choices

Dinner

- 2 fruit choices
- 4 meat choices
- 2 vegetable choices
- 1 milk choice
- 3 starch choices
- 2 fat choices

Website Review

Navigate the website for “Healthy People 2020” www.healthypeople.gov. Provide the mission, vision, and overarching goals for this initiative. Using Table 2.4 in the textbook, “Sample Nutrition Objectives” from Healthy People 2020,

choose five objectives and list three specific steps for each that food professionals can take to help meet the objective. The steps must be measurable. Include the resources and the educational tools needed to achieve these objectives.

Build Your Career Toolbox

Review the textbook section entitled “Cultural Adaptations to the Food Guide Pyramid.” A public health nutritionist is an expert in both food and nutrition. These professionals may work in health clinics, non-profit organizations, super markets or state health departments. They advise people in at risk communities about how they can better lead a healthy way of life.

Many public health nutritionists will give customized health information to individuals and specific groups. For instance, some nutritionists could teach patients in poor communities about high blood pressure, and how to prepare more healthy foods with less sodium. Other public health nutritionists could work with at risk communities with health problems about how to plan a diet for their families that has less sugar and fat.

Create a job description in the public health area for a Chef or a Registered Dietitian/Nutritionist for the following diverse cultures: Asian, Mexican, Latino and Mediterranean. Include cultural challenges, culinary experience, educational background and salary range for each.

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Ally's Case Study

Ally is a 35-year-old mother of three who tries to make appropriate food choices while grocery shopping. She and her husband have a 14-year-old boy who plays football year round, a 12-year-old daughter who is a competitive gymnast, and a 2-year-old son who is still in diapers. Her husband works long hours and is a truck driver so he eats most of his meals on the road. Ally tries to prepare well-balanced meals for her family and her personal goal is to eat a healthy vegetarian diet due her my family history of heart disease and breast cancer. Ally needs help understanding the difference between marketing terms, FDA approved nutrient claims, health claims, and structure function claims.

When she enters the supermarket, she heads directly toward the produce department where it is pretty easy to make healthy choices. Unfortunately, her budget does not allow her to purchase all organic fruits and vegetables. She looks around and next to the bananas there is a sign that reads “Great Source of Potassium,” so she purchases a big bunch of bananas. Near the tomatoes a placard states “Contains Antioxidants such as Lycopene,” so in her cart they go. She chooses some leafy greens such as spinach and romaine lettuce, as well as some cucumbers and carrots. In the cold case, there are various flavored pomegranate juices with labels that announce that they are “Fat Free” and “Can Prevent Cancer.” These juices are on sale so she decides to buy three large 32-oz bottles.

Ally also wants her family to consume more whole grains, so she makes her way to the pasta aisle. She chooses spaghetti that has claims on the box stating: “Made with Natural Goodness,” “Kid Approved,” and “Doctor Recommended.” These “buzz terms” lead her to believe that this product must be the best choice for my entire family. She chooses the low sodium spaghetti sauce because she reads on the label a claim that states “diets low in sodium may reduce the risk of high blood pressure.” As she looks at the crackers, she notices that there is a brand that claims that their product is “A good source of fiber.” Unfortunately, the label does not include the words whole wheat, but rather the words isolated fiber made from chicory root. The Nutrition Facts panel lists 3 g of fiber per serving, so she assumes that this must be a good choice.

Ally makes a few more food selections including cranberry juice and canned green beans. Both of these items have claims that state: “*Strengthen your immune system.*” She needs a snack for her 2-year old child, so she finds the perfect product: Fruit Juice Treats that contain “real fruit.” The packaging is decorated with pictures of fresh oranges and pineapple even though the main ingredients are corn syrup, sugar, and white grape juice concentrate. Last on her list are dairy products such as cheese, milk, and yogurt. Milk is another perfect choice for the entire family because she reads that it is “High in calcium; 20% Daily Value,” and “Calcium builds strong bones.” Ally feels that her shopping trip is a success and she made good choices today.

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Study Guide

2

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Student Name _____ Date _____

Course Section _____ Chapter _____

TERMINOLOGY

Dietary Reference Intakes (DRI)_____	A. 10-35%
Scientific Method_____	B. A set of guidelines developed by the USDA to convert nutrients into general recommendations about foods that should be consumed and/or avoided
The dietary goal for carbohydrate recommended range for adults_____	
Mediterranean Food Pyramid_____	C. 20-35%
The dietary goal for protein recommended range for adults_____	D. An organized, systematic approach to conduct research. Consists of a series of steps to progressively solve a problem
Dietary Guidelines_____	E. A set of dietary standards determined jointly by American and Canadian scientists designed to meet the needs of healthy individuals
Healthy People 2020_____	F. A plan developed to establish healthy objectives for the nation
Food Label_____	G. A tool used to assist the public and health professionals in choosing nutrients to include or avoid in their diet
The dietary goal for fat recommended range for adults_____	H. 45-65%
	I. A food guide plan which reflects the food intakes in Spain, Portugal, Southern France, Syria and Israel

Date _____

Chapter _____

"FOOD CHOICE" MENU PLANNING

Use Appendix B “Choose Your Foods Lists for Meal Planning”

- 1. Identify which Food Choice the following foods belong in:**

White bread: _____

Chicken breast: _____

Mayonnaise: _____

Grapes: _____

Corn: _____

Almonds: _____

Carrots: _____

- ## 2. How many choices do the following foods contain?

1 cup pasta: _____

8oz orange juice: _____

3oz salmon: _____

3. Fill in food choices that the following meal represents (place an "X" in the appropriate box, and indicate the number of choices).

[illegible]

Student Name _____

Date _____

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CASE STUDY DISCUSSION

Ally's Case Study: Claims on a Food Label

Review the section in Chapter 2: Claims on a label including health claims, nutrition content claims, and structure/function claims. After reviewing the case study, use this information to answer the following:

1. Explain and provide an example of a Health Claim.
2. Explain and provide an example of a Nutrient claim.
3. Explain and provide an example of a Structure/ Function claim.
4. Describe each claim that Ally finds while shopping and determine if each is an approved health claim, nutrient content claim, a structure/function claim or a marketing term.

Student Name _____ Date _____

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PRACTICE TEST

Select the best answer.

1. The Dietary Goal for adults for protein intake is
 - a. 10-15%
 - b. 10-25%
 - c. 10-35%
 - d. 10-45%
2. The Dietary Goal for adults for fat intake is
 - a. 0-10%
 - b. 10-15%
 - c. 15-30%
 - d. 20-35%
3. The Dietary Goal for adults for carbohydrate intake is
 - a. 0-10%
 - b. 30-55%
 - c. 45-66%
 - d. 50-60%
4. The RDA
 - a. is set at levels that exceed requirements for most individuals
 - b. meets the needs of individuals with special nutritional needs
 - c. is set by the USDA
 - d. is not a useful tool
5. The Dietary Guidelines
 - a. were developed by the FDA
 - b. translate specific nutrient values into general recommendations
 - c. can increase the risk of chronic disease
 - d. are used only by manufacturers on food labels

Student Name _____ Date _____

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TRUE OR FALSE

_____ The DRIs outline the dietary nutrient intakes for healthy individuals in the U.S. and Canada.

_____ UL represents tolerable upper intake level.

_____ The Mediterranean Diet contains a higher level of animal products than the American diet.

_____ Food Composition Tables can be used by chefs to analyze menu recipes.

_____ Dietary Standards are based on age, gender and growth stages

1. Other than the shape, provide 3 ways the Mediterranean Food Guide Pyramid differs from the USDA ChooseMyPlate.

2. List 3 benefits derived from the Mediterranean Diet to help in the reduction of heart disease.