The Food Label through the Consumer's Eyes

With all the choices available on grocery store shelves, there is no doubt that colorful packages and eye-catching product names are essential to standing out in the crowd. But beyond familiar brand names and well-known product images, your clients and patients may have questions about some of the information they see on a food label, particularly if they are trying to meet specific health goals. Health professionals can help consumers navigate the Nutrition Facts Panel (NFP) and ingredient list, as well as the various claims, terms and symbols on food products. Other food label requirements, such as the common name of the product, the net contents in standard measures and the name and address of the manufacturer, packer or distributor, also have many uses and should be noted, although this article will focus on the elements most useful for nutrition guidance and eating coaching.

While your clients and patients may know that the NFP is regulated by government agencies, they may not be aware of the extent to which the rest of the food label is regulated. For example, claims that a food, as part of an overall healthful diet, may help to reduce risk for a disease, such as osteoporosis or heart disease, are regulated by the US Food and Drug Administration (FDA) of the Department of Health and Human Services (HHS) and the Food Safety and Inspection Service (FSIS) of the US Department of Agriculture (USDA). The use of certain terms, including *low fat, fiber-rich* or *healthy*, is also regulated by these agencies. While consumers likely will not want the level of detail about food and beverage labels that this article will provide you, they do want assurance that the government has evaluated or allows and monitors the information available on these packages.

Evolution of Nutrition Labeling and Food Label Information

Since the 1930's, food labeling regulation in the US has evolved along with public health concerns of the time and scientific consensus regarding nutritional needs (Figure 1). Early on, there was a basic assumption that people's nutritional needs would be met through foods prepared and served in the home. The limited nutritional labeling legislated in 1938 was voluntary and geared toward reducing or eliminating possible misbranding and adulteration [Institute of Medicine (IOM), 2003].

In 1968, concerns regarding malnutrition peaked. The National Research Council (NRC) published the *Recommended Dietary Allowances* (RDA), which defined the minimum nutritional requirements for prevention of nutrient deficiencies. Following this, food labeling regulations were updated in 1973. Although still voluntary, the 1973 regulation introduced the concept of helping consumers understand how foods fit into an overall diet that could meet nutritional needs. In light of well-founded malnutrition concerns, the *population-coverage approach* was adopted, wherein nutrient content was expressed as a percentage of a reference value that would meet the needs of most consumers for that nutrient. The reference value was derived from the highest of the 1968 RDA values among all age groups over four years old* and was referred to on the label as the US Recommended Daily Allowance (USRDA) for that nutrient. For most nutrients, this was the value set for adult males, although the value set for iron was that for adult females. [*Note: These reference values did not reflect unique recommendations for some vitamins and minerals that were set higher for pregnant or lactating women (IOM, 2003).]

Weighing the Risk of Too Much Versus Too Little

Nutrient content per the stated serving size on food labels is expressed as a percentage of a reference value for that nutrient (Daily Value or DV). It is calculated from the highest requirement for all age groups older than four years, as determined in the 1968 RDA. This population-coverage approach grew out of concern for malnutrition and is set to meet the needs of 97% to 98% of US consumers. The approach proposed by FDA in the 1990s, and which is now recommended by the IOM, is to calculate a population-weighted reference value for nutrients. Such values are thought by many to be more appropriate, given the rarity of deficiency diseases in the US and the potential risk to children, whose needs could be much lower than a reference value that meets the highest of adult needs (IOM, 2003). Although not yet final, these new values are already being used to update government feeding programs, such as the Special Supplemental Feeding Program for Women, Infants and Children (WIC Program) and the National School Lunch Program.

Congress passed the Nutrition Labeling and Education Act (NLEA) in 1990. This ground-breaking legislation formalized

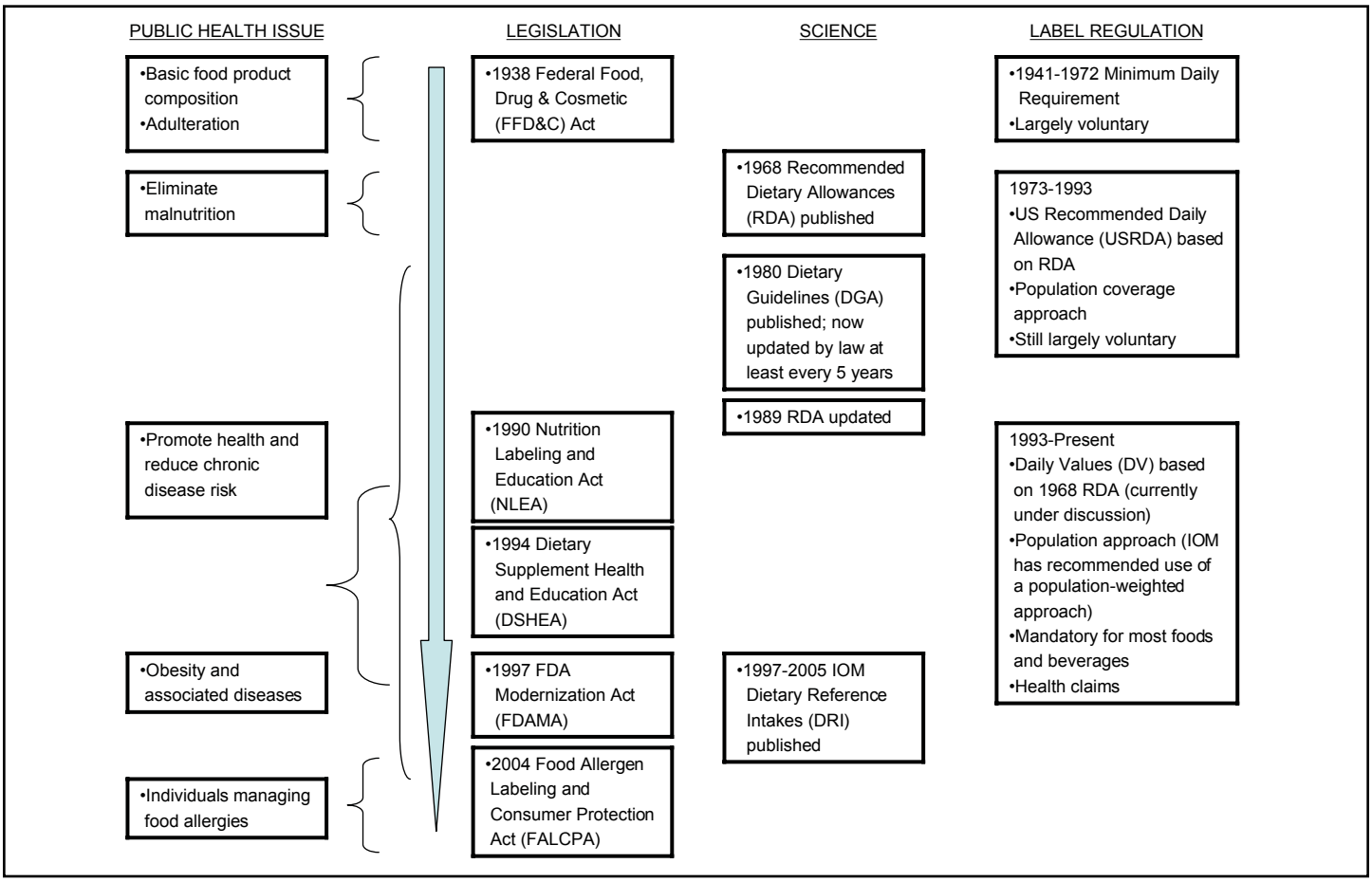


Figure 1. Key Points in the Evolution of Public Health, Science, Legislation and Regulation of Food Labeling

FDA's authority to regulate nutrition information on food labels. Regulations based on the NLEA in 1993 ushered in mandatory food labeling for most packaged foods and introduced the now-familiar Nutrition Facts Panel (NFP) format. The population-coverage approach was maintained, and the 1968 RDAs remained in effect as the source of data for nutrient reference values. FDA did, however, change the name of the reference values that would appear on the food label to Daily Values (DV). This legislation, although amended several times since 1993, still governs the nutrition labeling of food in 2007.

A Tour of the Food Label

FDA-regulated labels are required for most packaged foods in the US. Meat- and poultry-containing packaged foods are regulated by USDA's FSIS in a manner that is largely consistent with FDA's approach. Presently, foods prepared for immediate consumption (e.g., deli sandwich) are not required to provide nutrient labeling; however, increasing attention is being given to a rationale for and the potential public health benefit of labeling restaurant foods [Center for Food Safety and Applied Nutrition (CFSAN), 2007].

Front-of-pack

Although key brand information is prominent on the front of the food label, regulations provide parameters for the content of marketing messages. Certain descriptors are regulated if they appear anywhere on a food label, including the name of the food. For example, the word "healthy" is considered to be an implied nutrient content claim; thus, products using this word in a brand name or message must meet the regulatory standard for this term. (Note: Some limited exceptions for existing brand names were permitted through "grandfather" clauses.)

Reference to how a food was sourced, produced or processed is also subject to regulation. Some specifically-defined terms include *organic* and *fresh*. For example, since 2002, the use of the term *organic* on food labels has been regulated by the USDA's Agricultural Marketing Service via the National Organic Program (NOP, 2002). A succinct consumer-oriented summary of the regulations is available at: www.ams.usda.gov/nop/Consumers/brochure.html.

The front of the package may include health, nutrient-content or structure-function claims. Additionally, there may be reference to how a food fits within MyPyramid or the *Dietary Guidelines for Americans* (DGA) on the front or other parts of the food label (CFSAN, 2007).

Recently, some food manufacturers, industry groups and health organizations also have developed front-of-pack symbols for use on products that meet specific criteria. These criteria generally consider and/or are based on current dietary recommendations. The various programs do not all use the same definition of *nutrient density*, because, at present, there is no official definition of this term. The 2005 Dietary Guidelines Advisory Committee called for a definition of nutrient density, which is the concept of how "nutrient-packed" a given food or beverage is in relation to its calorie content (HHS/USDA, 2005).

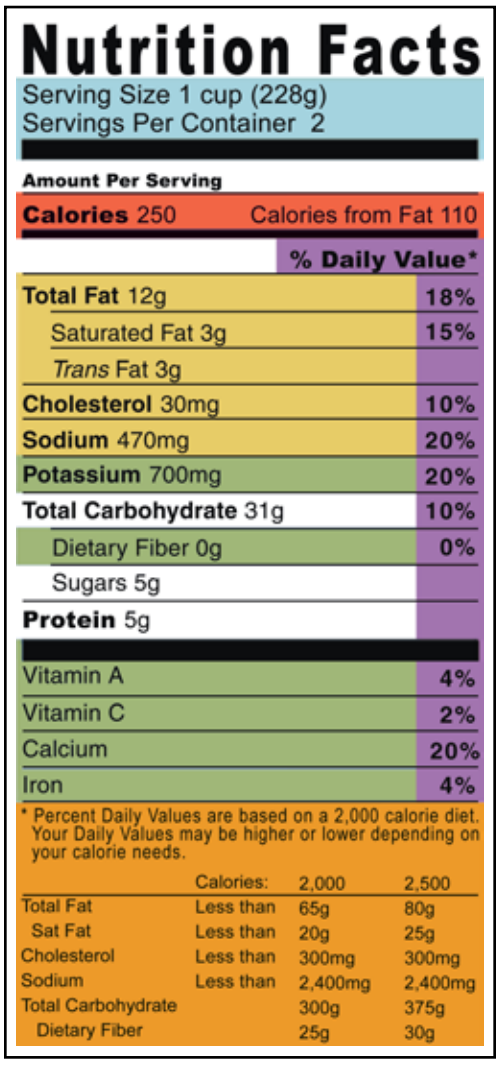
It is equally important to help consumers understand that certain terms that often appear on food labels, such as *natural, sustainable, free-range* and many others, are not the subject of specific regulations that define their meaning. However, FDA always has authority to stop the use of any terminology on the food label that it concludes is false or misleading to consumers.

Nutrition Facts Panel

The NFP is the hub for key nutrition facts determined to be of public health importance (Figure 2). This is where consumers will find information on the nutritional content of a stated serving size of a food and the percent daily values for many nutrients. The NFP is strictly regulated for content and the way in which nutrition information is presented.

Consumers commonly perceive that food manufacturers arbitrarily define the serving size for products. In fact, the serving size is standardized (usually by weight or volume) for different categories of foods according to *Reference Amounts Customarily Consumed* (RACC). Further, strict principles for applying serving size regulations are in place to account for product variations. Consistent serving sizes among similar foods in a product category facilitate product-to-product comparisons (CFSAN, 2007).

Figure 2. Example of the Nutrition Facts Panel



Nutrition Facts

Serving Size 1 cup (228g)
Servings Per Container 2

Amount Per Serving

Calories 250	Calories from Fat 110
	% Daily Value*
Total Fat 12g	18%
Saturated Fat 3g	15%
Trans Fat 3g	
Cholesterol 30mg	10%
Sodium 470mg	20%
Potassium 700mg	20%
Total Carbohydrate 31g	10%
Dietary Fiber 0g	0%
Sugars 5g	
Protein 5g	
Vitamin A	4%
Vitamin C	2%
Calcium	20%
Iron	4%

* Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs.

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Source: Center for Food Safety and Applied Nutrition: http://www.fda.gov/Food/LabelingNutrition/PrintInformationMaterials/ucm114155.htm

Specific nutrients must be listed in a proscribed order in the NFP (Figure 2). In 2006, the list was expanded to include *trans* fatty acids. The quantitative amount of most required nutrients is expressed in grams (g) or milligrams (mg) on the left side of the nutrient panel. Where applicable, the amount

of these nutrients is also expressed as a percentage of their respective Daily Values (% DV) on the right side of the panel. (Note: Required vitamins and minerals are expressed only as % DV.) Quantitative amounts and % DV work hand in hand to communicate how a food compares nutritionally to similar foods, as well as how it fits within an overall diet. Additional nutrients (e.g., vitamins and minerals) are required to be listed if they are added to a food as a nutrient supplement or if a claim is made about them. Voluntary nutrients may also be included at a company's discretion.

The % DV relates the content of a given nutrient to the daily reference amount for that nutrient. The reference values for nutrients are based on a 2,000 calorie diet and are explained in the "*" footnote near the bottom of the NFP. A common misunderstanding is that the % DV for macronutrients conveys the percentage of the calories that are attributable to fat, carbohydrate and protein. In fact, the % DV conveys the contribution of one serving of a food product to the daily reference amount for that nutrient (CFSAN, 2007). In the example in Figure 2, the 12 grams of total fat contribute 18% of the DV for fat (65g) in a 2,000 calorie diet. In contrast, 12 grams of fat contribute 110 calories (rounded up from 108 calories) from fat, which is 43% of the 250 calories in one serving. Thus, as this example illustrates, the % DV does not communicate the macronutrient distribution of a food.

Ingredients

By regulation, product ingredients must be listed in descending order by weight for all foods containing more than one ingredient. A significant development related to the ingredient list is food allergen labeling. The Food Allergen Labeling and Consumer Protection Act (FALCPA) of 2004 strives to improve access to allergen information by mandating use of familiar (layperson's) terms for listing eight key food allergens: milk, egg, fish, crustacean shellfish, tree nuts, wheat, peanuts and soybeans. These eight foods account for approximately 90% of food allergies. Regulations stipulate how to communicate the presence of these ingredients in foods (CFSAN, 2007).

Claims

The 1993 food labeling regulations established avenues for food manufacturers to make statements, or "claims," on food labels regarding the relationship of a food to health. Most nutrient content and health claims require FDA review and authorization, although some exceptions are detailed below. In all cases, health professionals and consumers can be assured that reference to the nutritional quality or health impact of a food is monitored by FDA.

Nutrient content claims refer to the amount of a nutrient in a food, usually characterizing it as "low" or "high" with respect to the DV or to the level found in similar foods. For example, a food "high in calcium" must provide at least 20% of the DV for calcium (at least 200 mg of calcium per RACC). The term "healthy" also is defined as an implied nutrient content claim, as discussed previously. While FDA may approve a nutrient content claim, a food manufacturer may also notify FDA of its intent to use a claim under the Food and Drug Administration Modernization Act (FDAMA). FDAMA allows the use of claims that have been substantiated through review by a respected scientific authority, such as the National Academies of Science. If FDA does not respond with an objection to the claim within a specified time period, the claim may be used.

Similarly, for health claims, the procedure may be to seek FDA approval of a health claim petition or, alternatively, notify FDA of intent to use a claim under FDAMA. FDA approval of a health claim petition is a highly rigorous process, requiring significant scientific agreement (SSA) before an approved health claim may be made on a food label. If the SSA standard is not met, a qualified health claim that explains the strength of the science may be allowed. A health claim represents the relationship of the food or a significant constituent of the food to a particular health condition.

- Example of an FDA-approved health claim: *"Diets rich in fiber-containing grain products, fruits and vegetables and low in saturated fat and cholesterol may reduce the risk of heart disease, a disease associated with many factors."*
- Example of an FDA-allowed qualified health claim: *"Scientific evidence suggests but does not prove that eating 1.5 ounces per day of most nuts, such as peanuts, almonds, pistachios, pecans, walnuts and hazelnuts, as part of a diet low in saturated fat and cholesterol and not resulting in increased caloric intake may reduce the risk of coronary heart disease."*

Another type of claim, called a structure-function claim, describes the effect of a food or an ingredient in a food on the structure or function of the normal healthy body. This type of

claim does not require FDA authorization, but any such claim must be truthful and not misleading.

- Example of a structure/function claim: *"Calcium helps build strong bones."*

Finally, food manufacturers may use dietary guidance statements that relate to dietary patterns and practices without FDA approval. Such statements have become increasingly popular with the release of the 2005 edition of *Dietary Guidelines for Americans* and the subsequent introduction of the MyPyramid.gov food guidance system.

What Does the Future Hold?

While none of us has a crystal ball with which to predict future labeling initiatives, there likely will be changes in the way nutrition information relative to a serving of food is presented. The dominance of public health attention to addressing the problem of obesity will be a reality for many years to come. In fact, the Dietary Reference Intakes (DRI) values for macronutrients were set and the 2005 DGA were issued within this context. Therefore, efforts to incorporate the DRI values and DGA into the food label must consider debates regarding serving sizes and prominence of calories on the NFP or, as some have suggested, on the front of the package. It has also been offered up that the NFP may be a place to link the type and serving size of a particular food or beverage to its place within MyPyramid, although this concept may present difficulties when it comes to addressing the many "combination" foods available in the market place. Transitioning the DV to the current nutrition recommendations put forth in the DRI and/or moving toward a population-weighted versus population-coverage approach would bring about significant changes, not only for the NFP but also for label claims.

The importance of the nutrition profile of a food and the place of individual foods within an overall eating plan is gaining attention, as evidenced by food manufacturer, industry organization and health association symbols that offer cues for identifying better-for-you products at a glance. Such systems will likely evolve in the coming years, but strategies to help consumers make sensible choices that align with their personal nutrition goals are here to stay. Health professionals are encouraged to assist consumers in using the wealth of information available to them on food labels.

References:

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