

A Simplified Guide to Creating **Nutrition Facts** Labels

Jillian Erickson
Anand Mohan



Department of Food Science and Technology,
University of Georgia

Table of Contents

| | |
|---|----------|
| Introduction | 2 |
| What is a Nutrition Facts label? | 2 |
| Serving Size and Servings Per Container | 2 |
| What are the different types of Nutrition Facts labels? | 3 |
| Formats for Small Packaging | 3 |
| Simplified Format | 4 |
| Aggregate Format | 5 |
| Dual Column Format | 6 |
| Who needs a Nutrition Facts label? | 6 |
| Nutrient Content Claims and Health Claims | 7 |
| Small Business Exemption | 7 |
| What are the proposed changes to Nutrition Facts labels? | 8 |
| How can I get a Nutrition Facts label? | 9 |
| UGA Services | 9 |
| Common Mistakes | 9 |

Companies and individuals who process and sell food must provide a Nutrition Facts label (NFL) on their food products. However, the technical aspects of creating an NFL and meeting federal and state regulatory requirements have always challenged small and very small processors. The FDA mandates that most packaged food products bear an NFL to inform consumers of the nutritional value of the product. The FDA website provides comprehensive detail on federal regulations, but the wealth of regulatory information appears complex and overwhelming to owners of small and very small companies.

This bulletin provides a simplified guide to understanding NFL components, formatting, regulatory exemptions to labeling requirements, and answers to general questions on creating a complete and accurate NFL. The topics covered are based on questions frequently received by UGA Extension Food Science on creating NFLs for small and very small food processing companies.

What is a Nutrition Facts label?

An NFL is mandatory for most manufactured foods intended for marketing to general consumers through commerce. The NFL on packaged manufactured food products communicates key information about product nutrients, recommended serving size, servings per container, and Percent Daily Value (%DV) to its consumers. Although the NFL can vary in format, its basic makeup remains the same.

The full Nutrition Facts label format lists calories, total fat, saturated fat, trans fat, cholesterol, sodium, carbohydrates, dietary fiber, sugars, protein, vitamin A, vitamin C, calcium, and iron, but other nutrients may be declared. All of these values, other than calories, sugars, protein, and trans-fat, also list a corresponding %DV. Furthermore, before printing labels through a label manufacturer, food processing companies should gather the required information to obtain an NFL. This limits the need to reprint labels by initially presenting the label manufacturer with all necessary label components.

Serving Size and Servings Per Container

The serving size of a product is an essential feature of the NFL. It states the amount of the product that should be reasonably consumed in one sitting. Determining serving size is not at the complete discretion of the food manufacturer. Serving size is determined in accordance with FDA regulation on Reference Amounts Customarily Consumed (RACCs), or the amount of food customarily consumed in one sitting. To determine the serving size, look for the appropriate food category and its RACC in the tables found in 21 CFR Section 101.12(b). Please note that while the RACC may be a starting point for determining serving size, actual serving size is not always the same as the RACC. For example, if one cookie weighs 35 g and the RACC for cookies is 30 g, the nutritional information will be calculated for 35 g, and the serving size would be listed as “1 cookie (35 g).”

Discrete pieces do not need to be altered to exactly match the RACC. Furthermore, if a unit of food (like that cookie) weighs between 67% and 200% of a reference amount, it may be listed as one serving. If more than 200% of the reference amount might be reasonably consumed in one sitting, the serving size can also be listed as one serving. Once the serving size is determined, the value is written as a household measurement followed by its metric equivalent in parentheses, typically grams. Common household measurements include cups, tablespoons, teaspoons, and pieces, but may also include other measurements. Beverages should be listed first in fluid ounces or cups, followed by its metric equivalent in milliliters.

After calculating the serving size, determine the number of servings in a particular container size. In addition, label manufacturers must know the net weight of the product in the container. The net weight indicates the weight of only the food contained within the package. Next, divide the net weight by the serving size. Finally, round the resulting value using the guidelines issued by the FDA to arrive at the number of servings per container. The FDA’s rounding guidelines state that values less than two or more than five must be rounded to the nearest whole serving, while values between two and five must be rounded to the nearest half (0.5) serving. Any rounded number should include the term “about.” For example, if the serving size for candy is 40 g and the net weight of the container is 100 g, the servings per container would be listed as 2.5 servings. If another container size of the same candy contained 350 g, the servings per container should be listed as “about 9 servings.” These calculations are detailed below.

$$\frac{\text{Net weight}}{\text{Serving size}} = \frac{100\text{ g}}{40\text{ g}} = 2.5 \text{ servings per container}$$

$$\frac{\text{Net weight}}{\text{Serving size}} = \frac{350\text{ g}}{40\text{ g}} = 8.75 \rightarrow \text{about 9 servings per container}$$

What are the different types of Nutrition Facts labels?

Although most NFLs are produced in the standard full format, several other types of NFLs are available to accommodate the unique details of all food products on the market. Additional formats address issues like package size and assortments of products within a single package. One major subset of the NFL is food intended for infants and young children. Products formulated for children younger than four require an NFL based on a separate set of regulations from the FDA. These regulations are listed in 21 CFR Section 101.9 and exceed the scope of this bulletin. The following sections describe a selection of commonly used label formats.

Formats for Small Packaging

Labeling space is often limited and valuable, making it difficult to design elements and mandatory label components in house. To provide complete and streamlined nutrition information, the FDA allows alternate formatting for small packages or packages with limited vertical space. Packages with limited vertical space, generally less than three inches, or small packages with less than 40 square inches total available for labeling may use tables to display information. As shown in Figure 1, the tabular display is a long and narrow horizontal layout.

| Nutrition Facts Serv. Size 1/3 cup (56g) Servings about 3 Calories 90 Fat Calories 20 <small>* Percent Daily Values (DV) are based on a 2,000 calorie diet.</small> | Amount Per Serving | | % DV* | Amount Per Serving | | % DV* |
|--|-------------------------|--|-----------|-----------------------|--|-----------|
| | Total Fat 2g | | 3% | Total Carb. 0g | | 0% |
| | Sat. Fat 1g | | 5% | Fiber 0g | | 0% |
| | Trans Fat 0.5g | | | Sugars 0g | | |
| | Cholesterol 10mg | | 3% | Protein 17g | | |
| | Sodium 200mg | | 8% | | | |
| | | | | | | |
| | Vitamin A 0% | | • | Vitamin C 0% | | • |
| | | | | Calcium 0% | | • |
| | | | | Iron 6% | | |

Figure 1. Tabular display of a Nutrition Facts label.

If this display does not fit on a label, the linear (string) format, a condensed horizontal layout, may be used. In addition, approved abbreviations may be used to keep the NFL within the space available. Examples of abbreviations include serv size, fat cal, and total carb. Smaller packages with less than 12 square inches available for labeling may entirely omit the Nutrition Facts label from the package. Instead, the label must list a phone number or address to contact for nutrition information, but in this case, no other nutrition information or nutrient content claims should be listed on the label or used in advertising.

| | |
|---|--|
| Nutrition Facts | Serv. Size: 1 package, Amount Per Serving: |
| Calories 45, Fat Cal. 10, Total Fat 1g (2% DV), Sat. Fat 0.5g (3% DV), Trans Fat 0.5g, Cholest. 0mg (0% DV), Sodium 50mg (2% DV), Total Carb. 8g (3% DV), Fiber 1g (4% DV), Sugars 4g, Protein 1g, Vitamin A (8% DV), Vitamin C (8% DV), Calcium (0% DV), Iron (2% DV). Percent Daily Values (DV) are based on a 2,000 calorie diet. | |

Figure 2. Linear display of a Nutrition Facts label.

Simplified Format

Foods with little nutritional value may qualify for the simplified label format. The simplified format may be used when there are insignificant amounts of at least eight of the following nutrients: calories, total fat, saturated fat, trans fat, cholesterol, sodium, total carbohydrates, dietary fiber, sugars, protein, vitamin A, vitamin C, calcium, and iron.

Even simplified labels must list calories, total fat, sodium, total carbohydrates, and protein, as well as any naturally present nutrients or nutrients added to the food, as required on a full nutrition label. Vitamin A, vitamin C, calcium, and iron may all be omitted from the simplified label if insignificant amounts are present. The quantities of insignificant amounts, as defined by the FDA, are listed in the table below. Generally, an insignificant amount is any amount presented as zero on the label, except for total carbohydrates, dietary fiber, and protein, which may be listed as less than 1 g.

| | |
|--|-----------------------|
| Nutrition Facts | |
| Serving Size 1 can | |
| Amount Per Serving | |
| Calories 140 | |
| | % Daily Value* |
| Total Fat 0g | 0% |
| Sodium 20mg | 1% |
| Total Carbohydrate 36g | 12% |
| Sugars 36g | |
| Protein 0g | |
| *Percent Daily Values are based on a 2,000 | |

Figure 3. Simplified format of a Nutrition Facts label.

*Taken from Appendix H: Rounding the values according to FDA rounding rules.

Table 1. Insignificant amounts of nutrients.

| Nutrient | Insignificant Amount |
|-----------------------|----------------------|
| Calories | < 5 calories |
| Total fat | < 0.5 g |
| Saturated fat | < 0.5 g |
| Trans fat | < 0.5 g |
| Cholesterol | < 2 mg |
| Sodium | < 5 mg |
| Potassium | < 5 mg |
| Total carbohydrate | < 1 g |
| Dietary fiber | < 1 g |
| Sugars | < 1 g |
| Protein | < 1 g |
| Vitamins and minerals | < 2% RDI |

Aggregate Format

The aggregate label format can be used to save space while conveying nutrition information for some products. When packaging several products in one container that are each meant to be eaten individually, such as a variety pack of chips, it may be cumbersome to include separate NFLs for each product on the package. In the aggregate format, nutrition information and %DV's for each product are listed in separate columns within the same NFL. Aggregate labels eliminate the need to print the list of nutrients on multiple products, thus saving space and streamlining appearance. In addition to variety packs, gift baskets with separately packaged products frequently use the aggregate format.

| Nutrition Facts | | Wheat Squares Sweetened | Corn Flakes Not Sweetened | Mixed Grain Flakes Sweetened |
|--|--|----------------------------|------------------------------|---------------------------------|
| Serving Size 1 box | | (35g) | (19g) | (27g) |
| Servings Per Container | | 1 | 1 | 1 |
| Amount Per Serving | | | | |
| Calories | | 130 | 70 | 100 |
| Calories from Fat | | 0 | 0 | 0 |
| | | % Daily Value* | % Daily Value* | % Daily Value* |
| Total Fat | | 0g 0% | 0g 0% | 0g 0% |
| Saturated Fat | | 0g 0% | 0g 0% | 0g 0% |
| Trans Fat | | 0g | 0g | 0g |
| Cholesterol | | 0mg 0% | 0mg 0% | 0mg 0% |
| Sodium | | 0mg 0% | 200mg 8% | 120mg 5% |
| Potassium | | 125mg 4% | 25mg 1% | 30mg 1% |
| Total Carbohydrate | | 29g 10% | 17g 6% | 24g 8% |
| Dietary Fiber | | 3g 12% | 1g 4% | 1g 4% |
| Sugars | | 8g | 6g | 13g |
| Protein | | 4g | 1g | 1g |
| *Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs: | | Vitamin A 0% | 10% | 10% |
| | | Vitamin C 0% | 15% | 90% |
| | | Calcium 0% | 0% | 0% |
| | | Iron 10% | 6% | 20% |
| | | Thiamin 10% | 15% | 20% |
| | | Riboflavin 30% | 15% | 20% |
| | | Niacin 30% | 15% | 20% |
| | | Vitamin B ₆ 30% | 15% | 20% |

Figure 4. Aggregate display of a Nutrition Facts label.

Dual Column Format

Some food products, before they can be consumed, require additional preparation or ingredients. The dual column label format neatly presents nutrition information for products “as packaged” and “as prepared” in one NFL. This format is particularly useful for dry mixes and cereals. The dual column label uses the first column to represent the product “as packaged”, which is the product as it is in the container without alterations. For example, the first column might list a cake mix or cereal without added milk. The second column of the label lists nutrition information for the product “as prepared”, meaning the food is ready to consume after adding ingredients or cooking according to instructions. Therefore, the second column would list nutrition information for the baked cake or a bowl of cereal with ½ cup skim milk.

In certain situations, the dual column format is mandatory. When a label includes a recipe that calls for 200% or more of the RACC of the product, nutrition information for the prepared product is required. For example, a chicken salad recipe included on a mayonnaise container using more than 200% of the RACC of mayonnaise would require a dual column format listing the nutrition information for both the mayonnaise itself and the chicken salad. However, bulk products used primarily as ingredients or for multiple purposes, such as flour, butter, and eggs are exempt from the dual declaration requirement. Therefore, a package of flour including the recipe for a cake that uses more than 200% of the RACC of flour would not require a dual column format listing the nutrition information of the cake.

| Nutrition Facts | | | |
|--|-----------|---------------|---------|
| Serving Size 1/12 package (44g, about 1/4 cup dry mix) Servings Per Container 12 | | | |
| Amount Per Serving | | Mix | Baked |
| Calories | | 190 | 280 |
| Calories from Fat | | 45 | 140 |
| | | % Daily Value | |
| Total Fat 5g* | | 8% | 24% |
| Saturated Fat 2g | | 10% | 13% |
| Trans Fat 0g | | | |
| Cholesterol 0 mg | | 0% | 23% |
| Sodium 300mg | | 13% | 13% |
| Total | | | |
| Carbohydrate 34g | | 11% | 11% |
| Dietary Fiber 0g | | 0% | 0% |
| Sugars 18g | | | |
| Protein 2g | | | |
| Vitamin A | | 0% | 0% |
| Vitamin C | | 0% | 0% |
| Calcium | | 6% | 8% |
| Iron | | 2% | 4% |
| * Amount in Mix | | | |
| ** 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 |
| Calories per gram: | | | |
| Fat 9 • Carbohydrate 4 • Protein 4 | | | |

Figure 5. Dual column format of a Nutrition Facts label.

Who needs to use a Nutrition Facts label?

Before spending time and money generating an NFL, manufacturers should make sure it is necessary for their product. The Nutritional Labeling and Education Act (NLEA) and FDA require that most food labels contain an NFL. Manufacturers may, however, voluntarily list nutrition information for a variety of reasons. Nutrition information can enhance a food label and provide transparency to the consumer about the contents of the product. Also, grocery stores and other major retailers often require nutrition information before they will sell a product.

Therefore, despite qualifying for an exemption, many manufacturers may prefer to provide NFLs to satisfy customer demands. The table below summarizes a list of common possible exemptions.

Some frequently encountered exemptions include raw fruits, vegetables, and fish, foods for immediate consumption, products from small businesses, and foods without significant nutrition. Additional exemptions can be found throughout 21 CFR 101.9.

Table 2. Summary of common exemptions.

| Exemption | Regulation |
|--|--|
| Small business | 21 CFR 101.9(j)(1) and 101.9(j)(18) |
| Food for immediate consumption | 21 CFR 101.9(j)(2) |
| Deli food, bakery items, and confections prepared and sold on-site | 21 CFR 101.9(j)(3) |
| Foods without significant nutrition | 21 CFR 101.9(j)(4) |
| Food intended for children 4 years of age and younger (separate labeling regulations) | 21 CFR 101.9(j)(5) and CFR 101.9(j)(7) |
| Dietary supplements (regulated by 21 CFR 101.36) | 21 CFR 101.9(j)(6) |
| Bulk foods requiring additional processing or packaging before being sold to consumers | 21 CFR 101.9(j)(9) |
| Fresh produce and seafood | 21 CFR 101.9(j)(10) and 101.45 |

Nutrient Content Claims and Health Claims

Any product that includes nutrient content claims or health claims on the label or in advertising requires an NFL. Even if the product qualifies for an exemption from nutrition labeling, the NFL is required to support the claim and provide the consumer with more detailed nutrition information.

Nutrient content claims are defined as any claim that characterizes the level of a nutrient in a food, while health claims characterize the relationship of the food to a disease or health-related condition. Examples of nutrient content claims include “good source of fiber,” “healthy,” and “reduced fat.” Health claims would include “heart healthy” and “supports healthy bones.” Although some of these claims may seem simple, they are heavily regulated by the FDA and must meet strict qualifications. The full requirements for nutrient content claims can be found in 21 CFR 101.13, and health claims can be found in 21 CFR 101.14.

Small Business Exemption

Based on gross sales, total food sales, number of units sold, or number of full time employees, small businesses may be exempt from nutrition labeling requirements. The FDA states that if a business’s gross sales are less than \$500,000 or their sales of food to consumers come to less than \$50,000, the business is exempt from providing an NFL. Table 3 summarizes this rule.

In addition, if a business employs fewer than an average of 100 full-time equivalent employees and sells fewer than 100,000 units of product in the U.S. over one year, they meet the low-volume product exemption. Unlike the small business exemption based on sales, this exemption must be filed annually with the FDA using an online form. Smaller companies with fewer than 10 full-time employees and fewer than 10,000 units sold in the U.S. over one year do not have to file a notice with the FDA.

Table 3. Small business exemption status.

| Food Sales | Total Sales | |
|------------|-------------|------------|
| ≤ \$50,000 | ≤ \$500,000 | Exempt |
| ≤ \$50,000 | ≥ \$500,001 | Exempt |
| ≥ \$50,001 | ≤ \$500,000 | Exempt |
| ≥ \$50,001 | ≥ \$500,001 | Not exempt |

*Adapted from 21 CFR 101.9(j)(1)(i).

What are the new changes to Nutrition Facts labels?

Until March 2014 and July 2015, the FDA proposed few significant revisions to NFLs since they were first required in 1993. After a series of revisions to proposed changes of the NFL, the FDA published its final rules on the new NFL on May 27, 2016. Recent changes stem from new nutrition science and public health research. The content and formatting updates are intended to make labels easier for consumers to use to make healthy choices. Among the major content changes are updating serving sizes to reflect current eating habits; requiring declarations of added sugars, potassium, and vitamin D; removing the “calories from fat” from the label; and including optional declarations of vitamin A and vitamin C content.

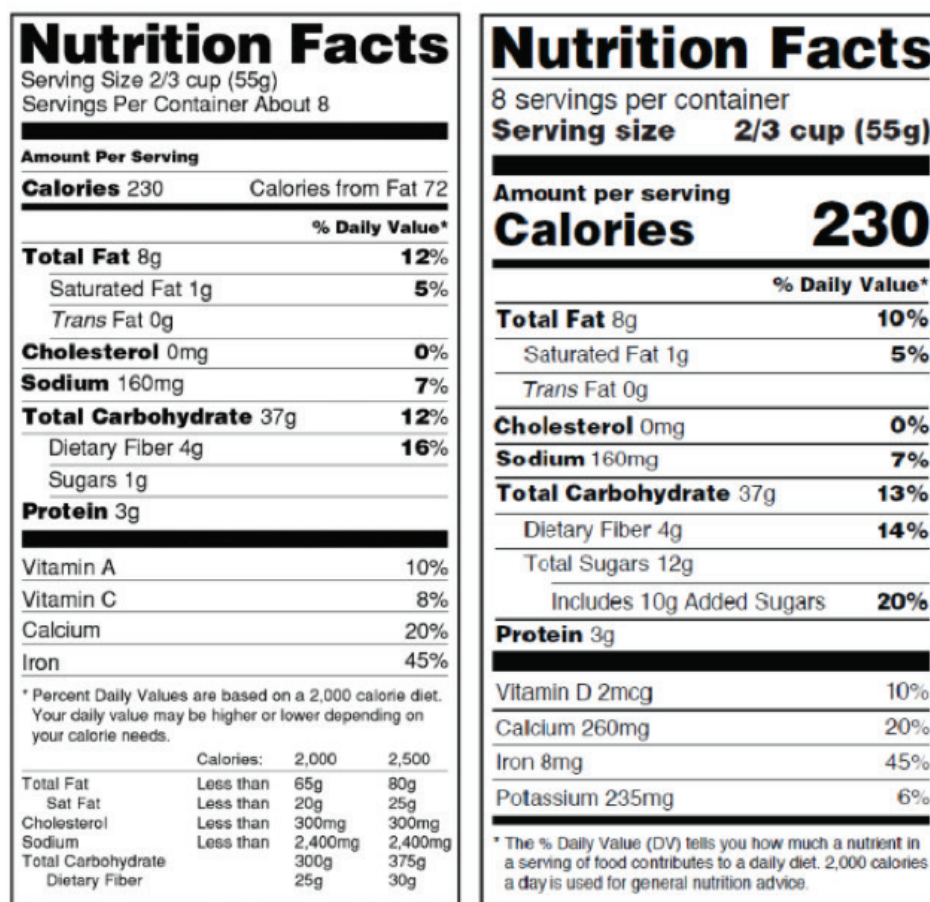


Figure 6. Original and proposed Nutrition Facts labels.

For larger packaged foods that may be consumed either in single serving or multiple serving portions, companies are now required to declare nutrition information for one serving as well as the entire package in a dual column format.

Design changes include prominently displaying calories and serving sizes and improving the footnote explaining Percent Daily Values. The figure below compares the original NFL and the new label. Food manufacturers have until July 26, 2018 to comply with new labeling regulations, except manufacturers with less than \$10 million in annual food sales, who will have until July 26, 2019.

How can I get a Nutrition Facts label?

A number of websites, analytical laboratories, universities, and other businesses offer NFL services. Usually, companies generate labels using either a nutrition database or detailed laboratory analysis. Nutrition databases function by entering the recipe of a product into a program containing nutrition information for a wide range of ingredients. Although nutrition databases have some limitations, they produce NFLs quickly and more affordably than laboratory testing.

Certain products with ingredients not found in nutrition databases may require laboratory analysis to determine nutrition information. Laboratory analysis is detailed and reliable but requires more time and resources, consequently costing more. Both methods are commonly used in the food industry and yield compliant Nutrition Facts panels.

UGA Services

The University of Georgia Extension Food Science offers timely, cost-effective nutrition labeling services. To obtain an NFL, food companies must complete and send a recipe form and payment form, both found online at efsonline.uga.edu. In addition, a sample of the product is useful in determining product serving size, but it is not required. When the NFL is complete, food companies receive a digital file of the NFL itself, a full nutrient analysis of the product, and a listing of ingredients by percent weight.

To make NFLs, the University of Georgia Extension Food Science uses Genesis R&D Food Analysis and Labeling Software, a nutrient database program. Genesis contains nutrition information for ingredients commonly found in a grocery store and from sources like the USDA and major food companies. If an ingredient in a recipe is not already included in our database, our staff can create a new ingredient and manually include its nutrition information in the program. This is often necessary when using specialty ingredients or prepared products.

Once an Extension staff member enters the recipe, the appropriate serving size will be determined and weighed according to RACCs as described earlier. Finally, a staff member will calculate servings per container and the percentage of moisture lost during cooking if necessary.

Common Mistakes

After generating many NFLs each month, our staff has noticed several common mistakes in the application process. Avoiding these errors will help customers receive their label quickly and efficiently. First, please read the instructions fully and contact our office with any questions. We are happy to assist our customers early in the process! When filling out the forms, be as detailed as possible. For example, when listing butter in a recipe, specify salted or unsalted butter. Also, whenever a prepared product is used as an ingredient, send a picture of the NFL for that product. We need this information for the recipe to accurately reflect the final product.

Another common error is not specifying fluid ounces and ounces by weight or using the two interchangeably. While fluid ounces measure volume (8 fl oz = 1 cup), ounces by weight measure weight and are determined with a scale (16 oz = 1 pound). Also, products should be weighed before and after cooking and the values reported. These measurements are used to determine the moisture lost during cooking of a product like barbeque sauce or baked goods.

Manufacturers should weigh all of the ingredients required for a batch once before cooking and once after cooking. The final cooked weight should be lower than the initial weight because of water loss. However, all food products are not cooked, so this section of the form may not apply to some products. Finally, please do not omit any portion of the form. We need the net weight of the product without the container, so do not leave it off. Paying attention to these common errors should ease the Nutrition Facts labeling process for both our staff and our customers.

References:

<http://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/LabelingNutrition/ucm2006828.htm>

<http://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/LabelingNutrition/ucm2006867.htm>

<http://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/LabelingNutrition/ucm385663.htm>

http://www.ecfr.gov/cgi-bin/text-idx?SID=d468574b9ee5c0d7ba84deb91bcc73bc&mc=true&node=se21.2.101_19&rgn=div8

extension.uga.edu