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DIETARY GUIDELINES PROPOSAL

Including a "Sugar" Category in the Ingredients Section of Food Labels

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Introduction

What is a Food Label?

A food label is a panel found on packaged food products.[1] It's purpose is to provide information about the average daily intake of nutritional content and ingredients used in the foods.[1] This information includes calories, fats (saturated fats and trans fats), proteins, carbohydrates, (fiber and sugars), cholesterol, vitamins, and minerals.[1,2] Thus, it enables consumers to make informed choices helping to support their dietary needs and health outcomes.[1]

The Center for Disease Control's uses the food label web page to help educate consumers by providing online-based, easily accessible information to increase food label reading skills.[2] This enhances ability for people to compare products, choose nutrient-dense options, and be selective in their dietary needs, which can help them manage specific adverse health conditions.[2] Examples of making selective choices based on the ability to read a food label may be choosing a food item with: 1) reduced sodium for hypertension, 2) lower cholesterol for hyperlipidemia, 3) reduced sugars for diabetes, or 4) zero gluten for celiac disease. This ability for comparison is crucial in helping prevention diet-related diseases.

Historical Development of Food Label Requirements

The requirement for having food labels in the United States (U.S.) was established under the Nutrition Labeling and Education Act (NLEA) of 1990.[3] The NLEA gave the U.S. Food and Drug Administration (FDA) the authority to require nutrition labeling on most packaged foods with the aim of regulating health claims.[1,3] According to the amended Federal Food, Drug, and Cosmetic Act (FDCA), food labels must include specific information.[3] This information includes: 1) serving size; 2) number of servings; 3) calorie content; 4) the amount of macro and micronutrients, including fat, cholesterol, sodium, total carbohydrates, complex carbohydrates, sugars, total protein, and dietary fiber; and 5) dependent on conditions of the food item, vitamins, minerals or other nutrients.[1–3] In addition, the law also mandated that labels include a list of ingredients in descending order by weight and information on any allergens present.[1,3]

A Case for Identifying Sugar on the Food Label

At the present date, no current U.S. food labeling regulations require that different types of sugars (i.e., glucose, fructose, sucrose, dextrose, and lactose) be identified as the common name '*Sugar*' under the Ingredients section on the Nutrition Facts label. Nor, does the Nutrition Facts label distinguish these types of sugars specifically under one umbrella, such as a separate '*Sugar*' category, in the ingredients section.

What are the food label requirements for sugar?

-The Common Name 'Sugar'

According to 21 CFR § 101.4, subpart A, section A, the list of ingredients for a food product must be displayed on the product label in descending order of predominance by weight.[1] Section B specifies that the name of an ingredient must be a *specific* name, not a collective or generic term.[1] Consequently, many forms of scientific nomenclature (maltodextrin, glucose, fructose, mannose, dextrose, lactose, galactose, etc.) are used to identify varieties of sugar rather than the common name '*Sugar*' in the Ingredients section.

-A 'Sugar' Category in Ingredients Section

The FDA regulations require that the total number of sugar grams and percentages be listed under the Sugars category beneath the Total Carbohydrates section.[1] These values only include monosaccharides and disaccharides, such as glucose, fructose, lactose, and sucrose.[1] The remaining sweetening agents, including syrups, honey, and excess concentrated fruit or vegetable juices are to be included in the Added Sugars category.[1] In addition, single-ingredient sugars and syrups, are not explicitly listed under the Total Sugars or the Added Sugars categories.[1] From a consumer view, the label shows cumulative sugars in the grams or daily percentage columns. However, the Ingredients section does not flag the ingredients as sugars due to nomenclature. This can cause uncertainty when attempting to make comparisons or product decisions. Thus, having a *'Sugar'* category within the Ingredients section will make the presence of sugars more obvious.

Why label sweeteners by the name 'Sugar'?
Including an ingredient section category labeled '*Sugars*' on food labels, could help in several ways. Chiefly, it would group scattered sweeteners into one category. Also, people could compare products more accurately. In addition, it would make sweeteners easier to track, which would highlight the various types of contents that are sugars and sweetening agents in the food products consumed.

Table 1. The Fifty-Eight Different Types of Sweeteners

Category	Common Name	Utility
Juices	• Fruit juice • Fruit juice concentrate	Sweetener Sweetener
Malts	• Barley malt • Malt sugar • Malt syrup • Maltodextrin • Maltol • Maltose	Sweetener; flavor enhancer Sweetener Sweetener Thickener; filler Flavor enhancer Sweetener
Nectars	• Agave nectar • Coconut nectar • Fruit nectar	Sweetener Sweetener Sweetener
Sugars	• Barbados sugar • Beet sugar • Brown sugar • Cane juice crystals • Cane sugar • Castor sugar • Coconut sugar • Confectioners' sugar • Dextrose • Date sugar • Demerara sugar • Evaporated cane juice • Glucose solids • Granulated sugar • Golden sugar • Muscovado • Palm sugar • Panocha • Powdered sugar • Raw sugar • Saccharose • Turbinado sugar • Yellow sugar	Sweetener Sweetener Sweetener Sweetener Sweetener Sweetener Sweetener Sweetener; texture Sweetener Sweetener Sweetener Sweetener Sweetener Sweetener Sweetener Sweetener Sweetener Sweetener Sweetener; texture Sweetener Sweetener Sweetener Sweetener
Fruit and Vegetable Constituents	• Crystalline fructose • Glucose • Fructose • Sweet sorghum	Sweetener Sweetener Sweetener Sweetener
Syrups	• Barley malt syrup • Brown rice syrup • Buttered syrup • Carob syrup • Corn syrup • Corn syrup solids • Date syrup • Golden syrup • High fructose corn syrup • Invert sugar, simple syrup • Maple syrup • Molasses • Sorghum syrup • Refiners' syrup • Rice syrup • Treacle	Sweetener Sweetener Sweetener Sweetener Sweetener Sweetener Sweetener Sweetener Sweetener Sweetener, prevent crystallization Sweetener Sweetener; enhancer Sweetener Sweetener Sweetener Sweetener
Other Classifications	• Dextrin • Lactose • Mannose • Honey	Thickener Sweetener Sweetener Sweetener

Representation of various types of sweeteners commonly used in ultr-processed food products.

Reducing Overall Intake
Adults in the U.S. eat an estimated 77 grams (g) (>18 tsp; 300 calories [kcals]) of sugar per day, which is above the recommended daily intake (RDI).[4] The American Heart Association reports that men should consume no more than 36 g (9 tsp; 150 kcals), whereas women should consume no more than 25 g (6 tsp; 100 kcals) of added sugar per day.[4] No more than 10% of daily calories (based on a 2 000 kcal diet) should come from added sugar,[5] indicating the maximum intake is no more than 200 kcals. Greater transparency in identifying sugars and sweetening agents may be able reduce intake.

Links to Chronic Disease
Studies have linked excessive intake of sweetened beverages and added sugar intake to rises in chronic diseases.[6,7,8] Such issues include: 1) cardiovascular diseases,[6,7] 2) weight gain,[7] 3) inflammation,[6,8,9] 4) increased cholesterol, or lipids,[6,9] 5) altered glucose metabolism,[6,7,9] 6) cancers,[7,9] and 7) associated mortality.[6] These studies report without commercial conflict of interest within the last five years.[6,7] One documenting significant harmful associations between dietary sugar and ten cardiovascular, seven cancer, and eighteen endocrine outcomes.[7] Even low quality evidence indicates risk.[7] Improving visibility may help to reduce intake helping to lower disease risk.

Who needs sugar awareness?
Virtually, all people need awareness. Specifically, populations who need sugar awareness most are seniors, individuals with obesity, those with blood glucose dysregulation, and certain ethnic groups at higher risk for chronic disease.

How can we help identify sugar and sweetening agent names easier?
Policy makers can help consumers identify sugar names easier by enacting a law with clear language on food packaging and standardizing the current food label to group all sugars and sweetening agents under a common term like *'Sugar.'* This will ultimately provide the consumer with simple knowledge on common sugar and sweetening agent aliases, while revealing the added sugar included in nearly 75% of packaged foods.[10]

When should government officials make food label changes?
Changes are necessary to address rising health issues. The FDA, NLEA and other governing officials should make changes to food labels when new scientific evidence shows that evidence-based trials

have successfully shown excessive sugar consumption is harmful. As well, laws and regulations require adequate updates. The evidence presented in this article is minor compared to the extensive research already available on the influence of sugar in promoting disease risk. When evidence suggest the risks of sugar consumption are significant, government officials should reassess label standards and update nutritional guidelines obligated to the people.

Where should "Sugar" be located on food labels?
Recommended Food Label Addition
We recommend the following be considered when mandating food label requirements in 21 CFR § 101.

SUGARS: SUGAR, DEXTROSE, HIGH FRUCTOSE CORN SYRUP, AND MALTOSE. See Figure 1.

Figure 1. Sample Food Label

Nutrition Facts

Serving Size 1/2 Cup (114g)
Serving per container 1

Amount Per Serving	
Calories 125	Calories from Fat 55
	% Daily Value*
Total Fat 60g	9%
Saturated Fat 1.5g	8%
Trans Fat <1g	
Cholesterol	5%
Sodium	10%
Total Carbohydrate	5%
Dietary Fiber	0%
Sugars 5g	
Added Sugar 4g	14%
Proteins 2.5g	
Iron	2%

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

INGREDIENTS: SUGAR, ENRICHED FLOUR (WHEAT), DEXTROSE, IRON, WATER, 70% DARK CHOCOLATE CHIPS, HIGH FRUCTOSE CORN SYRUP, MALTOSE, AND NATURAL FLAVORS.

SUGARS: SUGAR, DEXTROSE, HIGH FRUCTOSE CORN SYRUP, AND MALTOSE.

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