



Empowering Healthy Choices: Redefining 'Healthy' In Food Labeling to Prevent Nutrition-Related Diseases

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ARTICLE INFO ABSTRACT

Consumption of unhealthy foods is a major social problem in terms of nutrition, despite ongoing efforts by different institutions and organizations worldwide. Therefore, one of the main issues facing our society is improving the quality of the diet, and every option should be examined to accomplish this aim. Food labeling on food packaging may impact diets in positive as well as negative ways. The main purpose of nutrition labeling is to encourage the purchase and consumption of healthier foods, which includes consuming fewer calories. Many different nutrition labeling systems are implemented around the world. Food labels on the front of the package (FoP) and such claims as "healthy" have the potential to influence eating habits. This paper provides an overview of the proposal considering the redefinition of "healthy" criteria in terms of food labeling by the U.S. Food and Drug Administration (FDA), an agency within the U.S. Department of Health and Human Services (HHS). In the paper, the existing FDA criteria for using "healthy" on food labels are analyzing together with identifying the challenges and limitations of the proposed definition and their implications for public health. The analysis of the proposed definition was also carried out within the scope of this study, considering its suitability, generalizability, comprehensiveness, and effectiveness. This paper examines the relationship between food labeling, consumer perceptions, and purchase decisions as well. Additionally, the effect of the proposed intervention on the objective of healthy living is also discussed. At the end of the paper, it is reviewed that if the food labels can influence behavior and preferences regarding healthy food choices or not in terms of preventing diet-related diseases.

Keywords: Food Labeling, Food Packaging, Healthy, Health Claim, Consumer Behavior, Healthy Foods, Labels

Empowering Healthy Choices:

Redefining 'Healthy' in Food Labeling to Prevent Nutrition-Related Diseases

Many studies have been conducted about the U.S. health system. FDA is a leading player within the HHS in the U.S. health system, both in terms of its wide scope of duties and responsibilities along with its activities. This study analyzes current rules and focuses on the FDA's proposed definition of the term "healthy" as it relates to food labeling. The present analysis aims to identify and highlight the constraints and limits of the proposed definition concerning public health. Within the parameters of this study, the suggested definition was also analyzed, with consideration given to its appropriateness, generalizability, comprehensiveness, and effectiveness. This study additionally looks at the correlation between consumer perceptions, food labeling, and purchasing decisions. Furthermore, the impact of the suggested intervention on the goal of leading a healthy lifestyle is also covered. Additionally, whether food labels might affect behavior and preferences surrounding the selection of healthful foods is examined, as well as whether such an update is necessary.

Literature Review

Over the past century, poor eating and physical activity habits have contributed to an increase in the prevalence of chronic diet-related diseases in the United States. Approximately 50% of adult Americans suffer from one or more chronic, diet-related diseases that can be prevented, such as type 2 diabetes and cardiovascular disease (CDC, 2022). A consumer's adherence to the Dietary Guidelines is measured by their

Healthy Eating Index, which serves as a quality indicator of diet. As an obvious outcome of this situation, HHS together with its operating divisions (e.g. CDC, FDA, NIH, etc.) carries out various studies for the public health of Americans. The agencies develop policies to support community health and enforce laws and regulations to promote the health and safety of Americans. In this regard, as a reference to these studies, the FDA intends to prevent nutrition-related diseases and strengthen consumers' choices for healthy food consumption by redefining the term "healthy" in food labeling.

Regularly, the nutritional content of a product or beverage is disclosed on its nutritional label. For instance, various information is given about different nutrients, such as fat, sugar, salt, or energy content. Information can be presented in a variety of ways, such as a single number, a percentage of a daily consumption guideline, or with colors that represent different health levels. Several trends in food labeling have been implemented in various countries in recent years to support customers' healthy nutrition choices, and some developments have been noted worldwide. Within this framework, the FDA is conducting numerous ongoing studies, in addition, they also keep the topic of redefining 'Healthy' in food labeling on their agenda. This is because it is believed to influence consumer decisions for the prevention of nutrition-related diseases. In other words, food labels that make claims like "healthy" can give consumers information that they can quickly use to select healthier food options.

To use the nutrient content term "healthy," foods must fulfill certain nutrient-related requirements according to the regulations in the United States. To comply with the existing definition, foods must meet at least 10% of the Daily Value (DV) for one or more of the following nutrients: vitamin A, vitamin C, calcium, iron, protein, fiber, and saturated fat. Additionally, there are restrictions on total fat, saturated fat, cholesterol, and salt (FDA, 2022a). Since the FDA, the competent authority in this field, last defined "healthy" in 1994, studies on nutrition have dramatically advanced, and obesity and other diet-related disorders have become more common. To bring the "healthy" claim for food packaging up to date in conformity with the 2020-2025 Federal Dietary Guidelines and the most recent developments in nutrition science, the FDA has started a public process. It is worth noting that the "importance of a healthy dietary pattern as a whole rather than on individual nutrients, foods, or food groups in isolation" is emphasized in the 2020–2025 Dietary Guidelines for Americans.

The FDA modified its regulations in 1998 to allow for the label claim "healthy" to be applied to specific processed fruits, vegetables, and fortified cereal-grain products. In 1994, the Agency released its initial definition of "healthy," which stated that the term could only be applied to foods that were low in fat and saturated fat, met sodium and cholesterol limits, and included at least 10% of the DV of one or more of the following nutrients per serving: calcium, iron, protein, fiber, vitamin A, and vitamin C. The FDA stated that raw food could be branded as "healthy" even if it did not fulfill the 10% nutrient contribution criteria, acknowledging that raw fruits and vegetables can make a substantial contribution to a nutritious diet. According to the FDA, the term "healthy" may be used on frozen and canned fruits and vegetables if they don't have any additional sauces or syrups that could alter their nutritional profile, and enriched grain products that meet the Agency's identity standards.

In 2022, the FDA, in its recent proposal, aims to redefine the implicit nutrient content claim "healthy" to align more consistently with current nutrition science and federal dietary guidance. Instead of concentrating only on a small number of vitamins, minerals, and other nutrients, the FDA has suggested a new definition for what qualifies as "healthy" food (FDA, 2022a). This definition takes a more comprehensive approach to nutrition and food groupings. As is known, food manufacturers who produce and market FDA-regulated products that meet certain requirements specified in 21 CFR 101.65(d) may choose to use the voluntary "healthy" label and, the FDA thinks better products and eating habits may result from a "healthy" label together with an accurate definition. The FDA further emphasized that the goal of this new rule is to promote the use of more foods that the U.S. Dietary Guidelines prescribe as critical to maintaining good health.

As stated in the FDA Analysis dated 2016, as of that moment, the label "healthy" is applied to only 5% of foods available in the market. The proposed revision attempts to revise the concept of "healthy" to better match current nutrition science and federal dietary guidelines, acknowledging the evolution of nutritional science. This change could provide people with more realistic options when selecting a healthier diet, which should reduce the occurrence of chronic illnesses associated with poor nutrition, such as type 2 diabetes, and cardiovascular disease. This calculation is made considering the negative relationship between an individual's Healthy Eating Index score and mortality from all causes. So, it is understood that the FDA's main objective is to lower the prevalence of disorders including obesity, type 2 diabetes, cardiovascular disease that can be caused by poor diets. It appears that one of the FDA's healthy nutrition efforts aims to improve health equity and lower the burden of chronic disease by updating the "healthy" claim. As a result of a change in this scope, manufacturers' quantifiable costs associated with updating the "healthy" claim involve reformulation, labeling, and record-keeping (FDA, 2022b). However, within the scope of the studies carried out, public health professionals, the food industry, and nutritionists have all responded differently to the suggestion, emphasizing how difficult it is to regulate a factor as unique as a person's diet on a large scale.

Moreover, we should answer a basic question, does voluntary "Healthy" labeling promote healthy eating, or is it just a marketing and sales tool for food? According to the findings of a study, by transforming the range of products offered or by promoting product reformulation to achieve a healthier nutritional profile on a visible label, the use of nutritional labels may affect not only the people who buy or consume the food but also

the restaurant or retailer and the food industry as a whole (Crockett et al., 2018. See Appendix A for examples of nutritional labels used in practice). Consequently, with this updated term, it may be possible for consumers to prefer foods having such a label and for food industry production to shift towards healthy foods.

In this regard, the FDA has recently been working to make “food labels” simpler for consumers to understand so that people may easily choose healthier options. This updating action is one of the most recent activities of the FDA in that effort. So, the FDA published a proposed rule on September 29, 2022, in the Federal Register to revise the 1994 model definition of “healthy” for nutritional content claims (FDA, 2022a). The FDA extended the comment period to February 16, 2023, after publishing the proposed rule and the collected comments are currently under review. Currently, the FDA intends to give the industry three years after the final rule is published to comply. Consequently, companies would not have to change their labels or comply with the proposed rule in its final form until at least 2026.

The FDA is additionally looking into a symbol that food producers can use to support the “healthy” claim (FDA, 2022c. See Appendix B for the Draft “Healthy” Symbols to be applied with the proposed healthy rule). Furthermore, the FDA published draft industry guidelines in 2023 for “voluntary” front-of-package labeling that includes visuals, websites, and packaging. “Support the use of more nutrition-related labeling statements that focus on foods and food groups concerning nutritious eating patterns” the FDA stated in its explanation of the guidance’s purpose. However, the effectiveness of front-of-package nutrition labeling in giving customers useful information was examined in hundreds of international studies for a recent research report that was published in the Journal of Public Policy and Marketing and the findings showed that the effect was not particularly significant (Zlatevska et al., 2023). According to another research that also focused on breakfast cereals found that while there is a mismatch in the US between consumers’ claim preferences and marketers’ claim use, there is a significant match in France (Chandon & Cadario, 2022). Consequently, according to such kind of research, it is seen that there are different consumption trends in different markets, and it is understood that manufacturers in different countries have different behaviors in food labeling.

By the way, a “graphic warning label” option is also available, which is one of the best ways and practices to present nutritional information as implemented in Israel, Chile, Peru, Uruguay, and other Latin American countries. According to a year 2021 study by Song et al., one of the studies in this field, mandatory color-coded labeling and warning label policies are successful in directing consumers’ preferences and encouraging the food industry to reformulate their products (Song et al., 2021). The findings demonstrated that warning labels and color-coded successfully caught consumers’ attention more than the control condition and enhanced their comprehension of the nutritional information. So, this study underlines that while warning labels had the advantage of preventing unhealthy purchasing behavior, color-coded labels succeeded in encouraging the purchase of healthier products (Song et al., 2021). Notwithstanding the actual healthiness of food products, consumers may adopt more positive attitudes and be more willing to purchase them because of health claims and FoP labels, but, on the contrary, one possible disadvantage of this positive bias is the fact that consumers may consume more unhealthy foods (Talati et al., C. 2016). On the other side, in Song et al. study, it is noted that the labels changed the items’ suggested consumption amounts, frequency of use, and perceived healthfulness. In any case, through improvements in the nutritional quality and nutrient content of the products that customers purchase or select, these practices such as color-coded labeling can create healthier consumer behavior (Song et al., 2021).

In addition to limiting nutrients, the proposed framework for the new definition of “healthy” term takes a food group-based approach, recognizing that each food group provides a variety of essential nutrients for a diet. By requiring that food products contain a specific amount of food from at least one of the food groups or subgroups recommended by the Dietary Guidelines, 2020–2025 to be classified as “healthy (FDA, 2022a. See Appendix C for the proposed criteria for Certain Food Groups and Sample Foods by FDA),” the proposed “healthy” standards would encourage healthy dietary patterns. Under the proposed rule, a food product’s consumption of certain nutrients, such as sodium, saturated fat, and added sugars, would also have to be limited.

The findings show that the FDA has shifted its emphasis from the total amount consumed to nutrient-related parameters including carbohydrates, salt, and fat type. Foods high in protein, whole grains, reduced-fat dairy, and healthful oils like olive will be regarded as healthy. The nutrient profile and beneficial contribution of raw whole fruits and vegetables to a healthy diet would promptly qualify products for the “healthy” claim under the proposed definition. Additionally, foods like water, avocados, almonds, seeds, higher-fat fish like salmon, and some oils are examples of products that would be permitted to carry the “healthy” claim under the revised definition but are not allowed to under the existing definition. However, currently considered “healthy,” but not under the proposed definition, are products like heavily sweetened cereal, yogurt, and white bread (FDA, 2022a).

Furthermore, according to the most recent nutrition science and federal dietary guidelines, some foods (like some ready-to-eat cereals that might be high in added sugars) contain levels of nutrients that would not support consumers in maintaining healthy dietary practices. Therefore, in conformity with the existing definition, some manufacturers are still able to use the term “healthy” on these foods. Following the fight between KIND Snacks and the FDA through “nuts” in 2015, it is understood that the FDA gave a start to updating the process its long-standing definition of “healthy”. As a result, according to the FDA, it was “a must” to update the definition and the criteria for “healthy” labels for food products in the context of

protecting public health interests and FDA also believes that an accurate regulation on this matter will positively impact on consumer understanding and healthy choices.

Moreover, the White House already mentioned this case during the conference on Hunger, Nutrition, and Health held in 2022. The Biden-Harris Administration declared its national strategy on Hunger, Nutrition, and Health and stated that it is possible to create a healthier future for Americans. Additionally, to reduce the number of Americans who suffer from diet-related diseases and the associated health inequities, President Biden declared a goal to end hunger and increase physical activity and healthy eating by 2030 (the White House, 2022). In the relevant report, one of the important steps of the announced strategy is related to food labeling, to empower consumers with the opportunity to make and access healthy choices; the aim is to develop a FoP labeling scheme for food packages and to update the criteria for the phrase "healthy" on food packages (the White House, 2022). So, in parallel with this strategy, the FDA is conducting the relevant process to update the term healthy. Furthermore, a federal plan is required to coordinate nutritional initiatives, even though various agencies are working in this field in a variety of ways (GAO, 2021).

In this part of this paper, we would like to analyze the proposed redefinition of the "Healthy" term in some respects. When the proposed rule is evaluated in terms of its "appropriateness", it is important to note that in addition to requiring products labeled "Healthy" to include "some amount of real food," the FDA's plan places restrictions on sugar levels for the first time (FDA, 2022b). This approach is sufficiently strong to prevent large portions of packaged goods from classifying themselves as "healthy." According to federal dietary requirements, products with the "healthy" title are required to be restricted in sugar, salt, and saturated fat and contain actual food.

The generalizability of the FDA's proposed rule on redefining the term "healthy" will depend on its alignment with industry practices, flexibility, public reception, and the ease of implementation for various food manufacturers. The rule's success in achieving its intended goals and being embraced by the food industry will play a crucial role in its broader applicability. Although this definition update is addressed on a food group basis, it provides clarity in terms of implementation. It is important that manufacturers follow the recommended limits to use the "healthy" label going forward, which forces the industry to start using "healthy ingredients" in their products. Nevertheless, within the commentary period, the Consumer Brands Association (CBA), representing around 1,700 leading food brands, expressed particular concern over proposed excessively strict added sugar thresholds and stated that the FDA's restrictive approach to added sugar content in foods classified as healthy is unjustified and that the FDA is not authorized to take this action given the lack of scientific consensus regarding its relevance to diet-related diseases. They also stated that if the proposed rule is implemented, food companies' First Amendment rights would be violated, and both manufacturers and consumers might be harmed (CBA, 2023). However, the American Health Association supports the FDA's updated definition of health, which emphasizes nutrient-dense diets and discourages the inclusion of harmful quantities of fat, sugar, and salt.

The proposed FDA rule's comprehensiveness depends on how well it considers important nutritional aspects, adheres to current scientific findings, is flexible enough to work with a variety of food categories, affects public awareness, is feasible for producers, and has strong monitoring and enforcement systems. In this regard, it appears that the proposed definition addresses basic nutritional factors and is compatible with current scientific developments and other relevant regulations. With this new definition, consumers will now only be able to see this label on truly up-to-date healthy products. However, CBA's reservations should also be considered in this respect.

On the other hand, some products carrying the "healthy" label will no longer be able to use this title because of conflict with the new definition, as per the present legislation. Additionally, manufacturers who wish to utilize this label will need to re-evaluate the ingredients in their products. As a result, rather than being practical, this change will need an extended and expensive process for manufacturers.

Although it is an important and necessary step to updating the "Healthy" label requirements, whether the "health claims" are only about health is still a question. In fact, the main purpose of manufacturers using this kind of label is to encourage people to purchase some food products other than real foods, such as fruits, vegetables, meat, dairy products, eggs, or fish. Therefore, it is unclear whether updating the terms of use of the "healthy" label will increase the consumption of healthy foods. Although the proposed rule is a significant improvement over the existing status, the FDA should also put "warning labels" in its agenda for harmful products, as they are a more effective way to promote public health than other symbols. Moreover, the efficiency of Front of Pack Nutrition Labels (e.g. Multiple Traffic Light, Warning Signs, Nutri-Score, and Health Star Rating) in accomplishing these objectives is still up for discussion despite their widespread use (Braesco & Drewnowski, 2023).

The "Healthy" claim can be considered as an example of front-of-package labeling. Front-of-package labeling includes any information, claims, symbols, or graphics that are prominently displayed on the front of a food or beverage package to provide consumers with quick and accessible information about the product. In the case of the "Healthy" claim, it is a specific labeling term used by food manufacturers to indicate that a product meets certain nutritional criteria or standards set by regulatory authorities. Consumers often rely on front-of-package labels like "Healthy" to make quick and informed decisions while shopping. But it must be noted that while such claims may enlighten consumers, they may also mislead them when it comes to the foods they

choose by, for instance, emphasizing certain favorable aspects of a product while disregarding other, less desired ones (Hawkes, 2004).

When a product carries a "Healthy" claim on the front of its package, it signals to consumers that the product is positioned as a nutritious and healthful choice. The claim may be accompanied by specific nutritional information or symbols that highlight the product's attributes, such as being low in certain nutrients, high in others, or meeting certain dietary guidelines.

According to a study performed by Grummon et al. the systems for labeling food on the front of the packaging that combines "positive and negative labels" have the potential to enhance comprehension and promote healthier purchasing habits compared to those that solely use positive or negative labels (Grummon et al., 2023). Additionally, in this study, the participants expressed more of a desire to ignore the negative labels rather than concentrate on the positive ones. Taking this kind of pattern of behaviors into consideration, food labeling systems including claims such as "healthy", need to be considered as a whole to strengthen healthy choices.

Apart from the practices in America, we would also like to touch upon the situation in Europe for comparison. In the European Union (EU), the term "healthy" is regulated in the context of food labeling under Regulation (EU) No 1169/2011 on the provision of food information to consumers, commonly known as the EU Food Information Regulation. According to this regulation, the use of the term "healthy" on food labels is not specifically defined. However, food business operators are required to ensure that any claims made on food labels, including claims related to health or nutritional properties, comply with certain criteria outlined in the regulation. Since 2006, the EU has limited claims that food includes healthful elements or that eating it would have positive consequences, it is imperative to consistently assess how consumers and operators comprehend and utilize claims to guarantee the continued effectiveness of the Nutrition and Health Claim Regulation (EC) No 1924/2006, specifically focuses on nutrition and health claims (de Boer, 2021). (EC) No 1924/2006 establishes a framework for ensuring that claims made about food products are accurate, truthful, and supported by scientific evidence. It prohibits misleading claims and requires that claims meet certain criteria for scientific substantiation and presentation. This regulation also aims to harmonize the rules governing nutrition and health claims across the EU, promoting fair competition and consumer protection. In summary, in EU, while both regulations address aspects of food labeling and consumer information within the EU, (EC) No 1924/2006 specifically focuses on nutrition and health claims, while (EU) No 1169/2011 covers a broader range of requirements related to food information provided to consumers.

In general, claims related to health, including the use of terms like "healthy," "nutritious," or "good/best for you," must be scientifically substantiated, clear, accurate, and not misleading to consumers. Additionally, they must comply with some specific criteria stated by the local rules. In conclusion, redefining such a claim and keeping the terms of this claim up to date per current science is a necessity to guide consumers correctly. Otherwise, the use of a label that does not comply with current science will result in unhealthy products being sold by unfair competition with alternative products in the market, rather than encouraging consumers to turn to healthy foods.

To put it briefly, this update includes the following matters:

- Modified meaning of the implied nutrient content allegation; the proposed rule increases the number of situations in which using the term "healthy" would imply a nutritional content claim that would need to be complied with under the new rules.

- "Healthy" integrates FDA's new "Food Group Equivalent" standard; a few products, such as raw, whole fruits and vegetables and water, might be considered "healthy" by default due to their nutritional value and ability to support a healthy eating plan. Nevertheless, unless the food products satisfy the "food group equivalent" requirements and are within certain limitations of saturated fat, sodium, and added sugars, they will not be permitted to use the "healthy" label. Thus, the FDA is adopting a food group approach that focuses on the whole diet. The minimum nutrient requirements for being considered "healthy" are no longer a component of the new definition. Rather, food products will have to include a minimum number of "food group equivalents" from one or more of the suggested food groups in the Dietary Guidelines.

- "Healthy" Restricts Sodium, Added Sugars, and Saturated Fats.

Despite its concentration on the whole diet, the FDA's proposed rule still places restrictions on specific nutrients for specific food products (FDA, 2022a. See Appendix C).

- New procedures for record-keeping; to make it easier for the FDA to assess whether or not the rule is being followed, the new policy lays forth record-keeping provisions that apply to all manufacturers. In cases where the information cannot be obtained from the nutrition facts label on the food product, manufacturers must maintain documentation stating their compliance with the rule.

Discussion

Food labels including claims serve as a source of marketing claims made by food companies in addition to providing information for consumers. Along with the numerous studies carried out in this area, it is still unclear whether or not such labeling is effective in promoting better healthier behavior. Various unique systems for nutritional labeling have been put into place all around the world. Making healthier food choices

may be encouraged by nutritional labeling. Based on improved nutrition science, the FDA suggested an amendment in 2022 to the "healthy" nutrient content claim, which was first created in 1994. The policy intervention is a part of the agency's nutrition programs, which aim to promote a better food supply and lower the prevalence of diet-related chronic diseases, which are the main cause of death and disability in the United States. With this proposed rule regarding redefining of "Healthy" term and setting the new criteria, the FDA aims to promote health equity and lower the rates of obesity, heart disease, type 2 diabetes, and several malignancies by giving customers the power to choose better food choices.

However, it is still a question whether the FDA's adaptation of the terms of use of the "healthy" label to today's science and relevant rules will serve the purpose of creating a healthy society by increasing the consumption of healthy foods. The public's willingness to make healthy decisions is largely dependent on their motivation and education regarding nutrition labeling and health claims' ability to improve national dietary patterns. Action on nutrition labels and health claims must be a part of an integrated strategy that targets both people and the population as a whole to significantly reduce the rising prevalence of diet-related non-communicable diseases (Hawkes, 2004).

The FDA's proposal limits sugar levels for the first time and mandates that items labeled "Healthy" contain "some amount of real food." This strategy is sufficiently strong to keep a sizable percentage of packaged items from being identified as "healthy."

In this respect, the CBA's concerns about the overly stringent added sugar thresholds proposed by the proposal and its criticism of the lack of scientific consensus regarding its relevance to diet-related diseases are also worth considering. Of course, this change must be grounded on scientific facts and reality where both producers and consumers may be harmed (CBA, 2023). It is a fact that the proposed rule would create a framework that would automatically refuse the great majority of packaged foods and be unreasonably restrictive by the related market players.

While simply updating the meaning of "healthy" would prevent foods that are currently unhealthy from using that label, it may not increase the consumption of healthy foods. Essentially, since "warning labels", practiced in Latin American countries, are a more successful means of promoting public health than other symbols and exercises, the FDA must also consider these practices when evaluating unhealthy products. In various research, the results showed that "color-coding" and "warning labels" were effective in focusing customers' attention and improving their understanding of the nutritional information (Song et al., 2021). So, the food labeling systems must be considered as a whole.

In summary, according to the new proposed strategy of the FDA, manufacturers may only designate their goods as "healthy" if they include a significant quantity of food from at least one of the main food categories, such as dairy, fruit, or vegetables, as advised by federal dietary standards. They also must follow certain nutrient guidelines, like those for added sugars, saturated fat, and sodium. Prior FDA regulations set limitations on salt and saturated fat but not on added sugars.

Research on interventions that could encourage consumers to utilize and comprehend nutrition labels and claims as well as strategies to encourage them to do so should be ongoing. In this sense, improvements to nutritional labels might be required to help customers create a point-of-purchase environment that is more appropriate. In conclusion, while there is currently insufficient data to determine how health claims affect diet and public health, nutrition labeling can be a useful tool for assisting customers in making healthy food choices and this case should be guaranteed by the law and regulations (Hawkes, 2004). Regulations should be created with the overarching objective of sustaining dietary improvements across populations to optimize the effectiveness of nutrition labels and health claims to enhance public health. It would be possible to identify key policy alternatives to support individuals in making better food choices by keeping an eye on various aspects of product labeling including claims.

Limitations of These Studies

In this paper, we examined more than ten peer-reviewed articles as well as publications by the FDA and other authorities in this field including Federal Register records. When the topic of our study is a policy intervention by the FDA, publishes many works and content, it was inevitable that FDA publications were the main sources of this paper. On the FDA website and its publications, there are a lot of articles, studies, and research concerning updating "healthy" terms in food labeling.

Similarly, a significant number of articles have been found in the field of our study topic. It should be noted that many articles only looked at a small number of product categories, which means certain cross-category shifts may have gone unnoticed. The reason for this limitation is that it is a big challenge to study the impact of food labels and claims on the "whole food supply" on a large scale. As a result, it is obvious that the literature research focuses on a certain product or product category. In addition, in the articles we reviewed, it was understood that food labels were evaluated by taking regional and cultural factors into account due to different demographic structures. Aside from this, in the studies, there must be more research targeting individuals with low levels of nutritional awareness and chronic illnesses has to be focused on reaching valuable and meaningful results.

Conclusions and Future Study

The goal of any program in this area is to direct Americans' current dietary choices toward healthier consumption. The FDA's suggestions for revising the term "healthy" are quite promising if "health claims" on food packaging are likely to improve public health. The 1994 definition of "healthy" for food packaging must be updated according to the 2020–2025 federal dietary guidelines as well as the latest developments in nutrition science. To achieve this goal, laws and regulations must be determined innovative, and grounded in the most up-to-date scientific knowledge with a proactive approach.

In the proposed rule, the FDA takes a food group approach with a concentration on the whole diet, which is a major change in strategy as well as the policy.

The FDA anticipates that more products will be permitted to utilize the "healthy" claim as a result of these proposed improvements. Only five percent of packaged foods are currently classified as "healthy" (FDA, 2022b). Thus, during the comment process, if the industry players and other participants carefully evaluated the impact of the proposed rule on labeling and the FDA managed this process efficiently, we believe that under any circumstances, the final updated rule will have a positive impact on the industry and consumers in terms of health guidance.

According to the report of the U.S. Government Accountability Office in 2021, of the \$383.6 billion spent on health care including Medicare and Medicaid, 54% went toward treating diabetes, cancer, and cardiovascular disease through government spending (GAO, 2021). Considering this cost, it is important for Americans to lead a healthy life and to promote this aim through various policy interventions. Many agencies are doing a wide variety of work in this area, but a federal strategy is needed to coordinate dietary efforts (GAO, 2021). In this regard, as stated in the research report of Crawford et al., multiple factors affect Americans' dietary patterns like as knowledge about healthy foods (e.g. food package claims like "healthy"), availability of healthy foods at work, school, and other group settings and marketing and nutrition labels on packaged foods (Crawford et al., 2018). Although federal diet-related efforts have been participated in by several departments, achieving this ideal goal is a long process. In this context, the FDA must include mandatory "warning labels" when assessing unhealthy products because they are a more effective way to promote public health than other symbols.

In this long journey, it is understood that also the White House put forward its national strategy on the issue by holding a conference on Hunger, Nutrition, and Health in 2022. It is also encouraging that a problem with such a broad scope has made its way into policymakers' agendas. In addition, from a sociological perspective, people need to be ready to have confidence that all statements made on labels, in advertising, and in the media are reliable. Furthermore, the people first need to trust that the relevant authorities are doing the necessary work regarding food labeling in the right way.

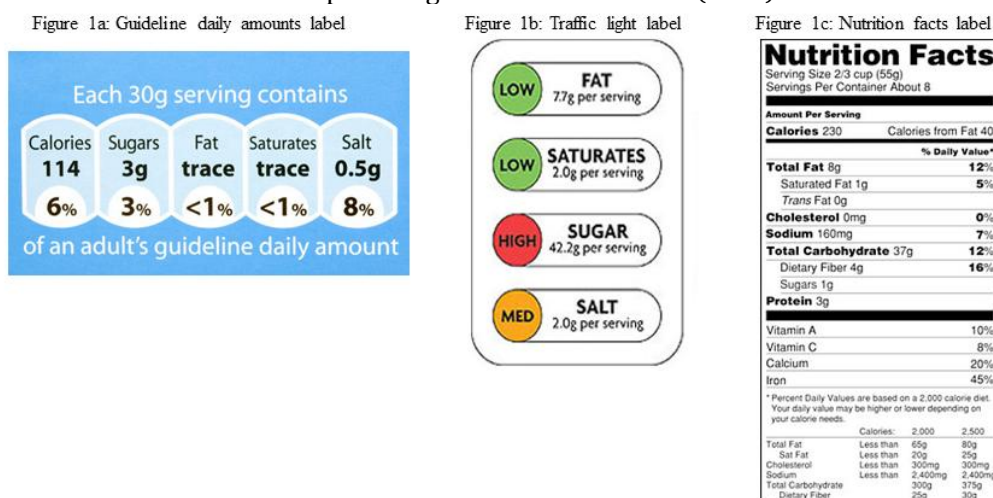
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Appendix A

Examples of nutritional labels used in practice given in Crockett et al. (2018) Review



Appendix B

Healthy Symbols Figure

Draft “Healthy” Symbols to be applied with the proposed “healthy” criteria (FDA, 2021)



Appendix C

Proposed Criteria for Certain Food Groups and Sample Foods by FDA (FDA, 2022a)

Proposed Criteria for Certain Food Groups and Sample Foods

Per Reference Amount Customarily Consumed

oz =ounce

g = grams

mg = milligrams

DV = Daily Value

Food Groups	Food Group Equivalent Minimum	Added Sugar Limit	Sodium Limit	Saturated Fat Limit
Grains	3/4 oz whole-grain equivalent	5% DV (2.5 g)	10% DV (230 mg)	5% DV (1 g)
Dairy	3/4 cup equivalent	5% DV (2.5 g)	10% DV (230 mg)	10% DV (2 g)
Vegetable	1/2 cup equivalent	0% DV (0 g)	10% DV (230 mg)	5% DV (1 g)
Fruit product	1/2 cup equivalent	0% DV (0 g)	10% DV (230 mg)	5% DV (1 g)

Proteins	Food Group Equivalent Minimum	Added Sugar Limit	Sodium Limit	Saturated Fat Limit
Game meat	1 1/2 oz equivalent	0% DV	10% DV	10% DV
Seafood	1 oz equivalent	0% DV	10% DV	10% DV
Egg	1 egg	0% DV	10% DV	10% DV
Beans, peas, and soy products	1 oz equivalent	0% DV	10% DV	5% DV
Nuts and seeds	1 oz equivalent	0% DV	10% DV	5% DV*
* Excluding saturated fat derived from nuts and seeds				

Oils	Food Group Equivalent Minimum	Added Sugar Limit	Sodium Limit	Saturated Fat Limit
100% Oil	N/A	0% DV	0% DV	20% of total fat
Oil-based Spreads	N/A	0% DV	5% DV	20% of total fat
Oil-based Dressing*	N/A	2% DV	5% DV	20% of total fat

* Must contain at least 30% oil and saturated fat level of the oil must be ≤ 20 percent of total fat.

Sample Foods	Individual food	Mixed product	Meal
			
Amount of food groups required	6-oz yogurt (1 food group equivalent)*	1/8 cup dried fruit and 1/4 oz nuts (At least 1/2 food group equivalent each from 2 different food groups)	1 oz salmon, 1/2 cup green beans, 3/4 oz brown rice (At least 1 food group equivalent each from 3 different food groups)
Nutrients to Limit (no more than)**	2 g saturated fat 230 mg sodium 2.5 g added sugar	1 g saturated fat*** 230 mg sodium 0 g added sugar	4 g saturated fat 690 mg sodium 2.5 g added sugar
<p>* A food group equivalent is the amount of a food group required</p> <p>** Amounts based on percentage of the Daily Value for that nutrient</p> <p>*** Saturated fat from nuts/seeds does not contribute to limit</p>			

Under the proposed definition, raw whole fruits and vegetables would automatically qualify for the “healthy” claim because of their nutrient profile and positive contribution to an overall healthy diet. Examples of foods currently ineligible to bear the “healthy” claim based on the existing regulatory definition, but that would qualify under the proposed definition are water, avocados, nuts and seeds, higher fat fish, such as salmon, and certain oils. Products that currently qualify for “healthy” that would not under the proposed definition include white bread, highly sweetened yogurt and highly sweetened cereal.