Public Comment on Docket No. FDA-2022-P-1832-0001: Citizen Petition from Center for Science in the Public Interest (CSPI), the Association of SNAP Nutrition Education Administrators (ASNNA), and the Association of State Public Health Nutritionists (ASPHN)

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INTRODUCTION

On August 4, 2022, the Center for Science in the Public Interest (CSPI), the Association of SNAP Nutrition Education Administrators (ASNNA), and the Association of State Public Health Nutritionists (ASPHN) submitted a citizen petition requesting that the Commission of Food and Drugs amend its regulations to require an easy-to-understand, standardized labeling system on the principal display panel of packaged foods and beverages. The authors request that the labeling system: 1) be mandatory, 2) be nutrient-specific, 3) include calories, and 4) be interpretative with respect to the levels of added sugars, sodium, and saturated fat per serving. ***Research evidence supports the petition's request that the US require a mandatory, front-of-package, interpretative food labeling system.***

BENEFITS OF MANDATORY, INTERPRETATIVE FRONT-OF-PACKAGE FOOD LABELS

The goals of the Food and Drug Administration (FDA) include reducing the burden of chronic disease through improved nutrition. Existing evidence indicates that well-designed food labeling systems can help achieve this goal by promoting consumer understanding of product healthfulness and shifting consumers toward healthier food and beverage choices. In their petition, CSPI, ASNNA, and ASPHN request that regulations require a mandatory, front-of-package, interpretative food labeling system that focuses on nutrients. Below, I discuss the evidence regarding each of these features as well as research highlighting the need for new, mandatory food labels.

Use and understanding of the Nutrition Facts Label are low

The primary food label required in the US is the Nutrition Facts Label. This label is usually located on the back or side of product packaging and provides numeric nutrition information (e.g., calories, grams of sugar). Use and understanding of this label are low. For example, an FDA study with a nationally representative sample of 4,398 Americans found that only 20% reported always using the Nutrition Facts Label when buying a food for the first time, and 1 in 8 said they *never* look at these labels.[1] Even when consumers do look at the Nutrition Facts Label, systematic reviews show that they often have difficulty understanding its content.[2] Moreover, use and understanding of the Nutrition Facts Label are lower among groups with lower income and educational attainment,[2–4] potentially contributing to sociodemographic disparities in dietary quality. Even among adults with a college degree, nearly half cannot correctly interpret one or more aspects of the label.[4] The Nutrition Facts Label provides important information and should remain on products; it is clear, however,

that additional labeling systems are needed to provide consumers with nutrition information that is both accessible and easy to understand.

Consumers pay more attention to front-of-package labels than the Nutrition Facts Label

In contrast to the low use of the back-of-package Nutrition Facts Label, research shows that many consumers rely on information presented on the front of food and beverage packaging,[5–7] perhaps because consumers make food purchasing decisions very quickly.[8] Eye tracking studies confirm the importance of front-of-package labels for drawing attention to nutrition information, finding that when products display both front-of-package labels and Nutrition Facts Labels, consumers pay more attention to the front-of-package labels than the Nutrition Facts Labels.[9,10] Eye tracking studies have also found that when front-of-package food labels are added to products, consumers are more likely to notice nutrition information, find nutrition information more quickly, and pay attention to that information for longer periods, compared to when only the back-of-package Nutrition Facts Label is present.[11] In-person laboratory studies and real-world natural experiments confirm that adding front-of-package labels to products can lead to beneficial changes in consumer perceptions and food purchase behavior.[12–17] Together with research on low use and understanding of the Nutrition Facts Panel, these studies indicate the need for new labeling systems that consumers will notice and understand.

Interpretative labels are more effective than numeric labels

Given that scientists agree that food labels should be displayed on the front of product packaging, an important next question is *how* such front-of-package labels should be designed to maximize their benefits. Stakeholders and policymakers have proposed a variety of options.[18–20] A key distinction among these options is whether the label presents only raw numeric information about the product's nutritional profile (i.e., numeric labels, such as the current voluntary Facts Up Front labeling system in the US) or if it presents cues as to how nutrition information should be interpreted (i.e., interpretative or evaluative labels).[19,21,22] The research evidence aligns with the petition's call for the US to adopt an interpretative – rather than numeric – labeling system. An interpretative system has already been recommended by The National Academy of Medicine a decade ago[22] and considerable research evidence supports using interpretative labels over numeric labels. For example, consumers often make decisions very quickly and without deep "rational" processing of information,[8,19,23–25] suggesting that cues such as icons, scores, words, and colors could help them assess a product's healthfulness more accurately. Consistent with this hypothesis, studies from several countries demonstrate that interpretative labels perform better than numeric labels at improving consumers' understanding of products' healthfulness.[26–33] Studies that examine consumers' purchase behaviors also find that interpretative labels perform better at improving the overall healthfulness of people's choices compared to numeric labels.[26,27,30,34–38] These objective outcomes are also supported by consumers' experience of labels. Studies that ask consumers what labels they prefer, for example, find that consumers tend to favor interpretive and easily comprehensible labeling systems.[36,39–41] Moreover, providing labels that are easier to interpret may be particularly important for promoting health equity given that groups with lower educational attainment are less likely to use and understand numeric labels than groups with higher educational attainment.[2,4,42] Indeed, a large body of evidence finds that, in contrast with the Nutrition Facts Label, interpretative food labels tend to be similarly effective regardless of race/ethnicity, income, or educational attainment.[13,14,43–49]

Mandatory labeling systems are more effective than voluntary labels

Research indicates that mandatory food labeling systems are more effective than voluntary systems, consistent with CSPI, ASNNA, and ASPHN's request that FDA make mandatory any new front-of-package labeling system. Research evaluating the voluntary Health Star Rating system in Australia and New Zealand, for example, found that two years after the implementation of this system, only 5% of packaged foods and beverages displayed the Health Star Rating labels.[50] This figure increased somewhat by three years after implementation, but was still low, at just 28%.[51] The limited uptake of voluntary labels is problematic because customers cannot determine if a product lacks a label because it is unhealthy or because the manufacturer simply chose not to label the product. Indeed, evaluations of the voluntary Health Star Rating labels, for example, find that retailers primarily display labels on healthier products that earn higher scores (more stars) and leave less unhealthy products unlabeled. One study found that >75% of all products with the HSR label received ≥3 stars (out of a possible 5), and that the mean score for products displaying the HSR was significantly higher than the mean of products not displaying the labels (3.4 stars vs. 2.7 stars).[51] Similarly, a study of packaged foods marketed to children in Australia found that 28.5% of products displayed the HSR label, with >80% receiving ≥3 stars.[52] By contrast, evaluations of mandatory labeling systems find very high compliance – the vast majority of products required to bear mandatory labels display these labels.[53,54]

In addition to guiding consumers, front-of-pack labels can also incentivize manufacturers to reformulate products to reduce the amount of nutrients of public health concern.[55] Voluntary labeling systems, however, have been found to spur only very small changes to the food supply. Implementation of voluntary HSR labels, for example, was associated with minimal product reformulation, resulting in only small changes in energy density, sodium, and fiber content.[50] By contrast, mandatory labeling systems provide much stronger incentives for companies to reformulate their products to be healthier.[21] For example, one study examined implementation of mandatory food warning labels in Chile. This study found that many retailers removed unhealthy nutrients from products to avoid exceeding the "high in" thresholds that triggered the mandatory warnings; the prevalence of products high in sugar and sodium, for example, dropped from 80% to 60% and 74% to 27%, respectively.[56] Reformulation appears to be concentrated around products that are close to the thresholds prior the labeling,[56,57] suggesting that tightening thresholds over time could be necessary to spur continued reductions in unhealthy nutrients in the food supply.

Mandatory labels can also facilitate implementation of other policies and regulations. For example, if the government implements mandatory nutrition labels based on specific nutritional criteria (e.g., requiring warnings for products that exceed certain thresholds for sodium, saturated fat, or added sugars), then government buildings and institutions like schools, hospitals, and universities can use the same regulatory criteria in their policies regulating what foods they serve and sell on their premises. For example, Chile's Law of Food Labeling and Marketing required front-of-package warning labels on products that are "high in" calories and nutrients of concern, with the added stipulation that products with warning labels cannot be promoted to children under 14 years of age and cannot be sold at schools or provided as part of school food programs.[58] The unified suite of policies reinforces the message that consumption of these products should be limited[59] and may facilitate monitoring efforts.[60]

Nutrient-specific labels are especially promising

Different types of interpretative front-of-package labels have been tested and implemented globally. While some provide a summary assessment of the product's nutritional quality (e.g., a grade from A to E), others provide information on nutrients of concern (e.g., warnings signaling when products are high in these nutrients). Although evidence does not uniformly point towards a single type of interpretative labeling system outperforming all others, it is clear that nutrient-specific labels – and especially nutrient warnings like those used in Chile – are among the labeling systems that promote consumer understanding, encourage healthier food purchases, and discourage unhealthy food purchases. Nutrient warnings deliver information simply, providing a single, clear message that a product is high in a nutrient of concern. This simplicity may be especially helpful when consumers are making a binary decision about to buy or not buy a given product.[61] A recent meta-analysis of experimental and quasi-experimental studies demonstrated that nutrient warning labels significantly outperformed other labeling schemes, including traffic light labels, in reducing healthfulness perceptions of unhealthy products, reducing unhealthy product purchase intentions, and discouraging unhealthy product purchases.[79] Further, nutrient warnings reduced the total energy and saturated fat content purchased, as well as improved the total healthfulness of selected products.[79] Experimental studies indicate that nutrient warnings are perceived as effective and evoke consumer responses that are predictive of longer-term behavior change. Studies with adults in the US, for example, have found that nutrient warnings have higher perceived message effectiveness, evoke more thinking about harms and fear, and lead to lower perceptions of product healthfulness compared to control labels.[44,62] In Canada, a randomized trial found that nutrient warnings led to more healthful food and beverage purchases compared to the status quo of no front-of-package labels.[43] Other laboratory studies from around the world – including Europe, Oceania, and South America – present similar findings in terms of consumer perceptions, comprehension, and behavioral intentions.[16,28,35,36,48,63–69]

Real-world evidence also indicates that nutrient warnings could help to advance FDA's goal of reducing the burden of chronic disease through improved nutrition, by encouraging healthier purchases. In 2016, Chile became one of the first countries to implement mandatory front-of-package nutrient warning labels. Longitudinal and quasi-experimental studies evaluating the Chilean policy have demonstrated that it has impacted both the supply and the demand side of food retail: consumers have reduced their purchases of labeled products (i.e., products high in sugar, saturated fat, calories, and sodium)[15,57,70] and the food industry has reformulated a substantial proportion of products to improve their nutrient content.[56,57]

Other considerations: Labeling systems should explicitly discourage unhealthy foods

In addition to the aforementioned considerations for designing front-of-package food labels, I would like to highlight research evidence indicating that front-of-pack labeling systems are more effective when they explicitly discourage unhealthy foods, rather than only promoting healthier options. "Endorsement" or positive-only labels have several shortcomings relative to systems that discourage unhealthy foods. For example, positive-only endorsement labeling systems have been shown to impact consumers' perception of a product's healthfulness, but may not improve understanding of its nutritional content, and can lead to incorrect beliefs about a product's healthfulness.[71] In one study comparing different types of labels, for example, participants rated a product with an endorsement logo as healthier than

a product with the same nutritional profile displaying a traffic light label, which allows for a more nuanced assessment of product healthfulness.[72] Simple endorsement labels may also have unintended consequences for consumers, including leading to overconsumption and other unhealthy eating behaviors.[73,74] Evidence also suggests that endorsement labeling systems have limited impacts on the healthfulness of food purchases. One randomized experiment found no difference in consumption or purchase intentions between cereals with an endorsement label and unlabeled controls.[75] Studies of the Health Star Rating labels, which rates foods only in degrees of healthfulness rather than explicitly discouraging less healthy, have also found that this system has no effect on the healthfulness of food purchases.[76]

By contrast, studies of labeling systems that explicitly discourage consumption of unhealthy foods find that these labels are likely to promote consumer understanding and lead to healthier food and beverage purchases.[21,77] For example, one randomized trial found that warning labels resulted in significantly healthier packaged food purchases compared to a no-front-of-package-label control, while the positively-framed Health Star Ratings did not improve purchase healthfulness.[36] Another randomized experiment directly compared consumer reactions to a labeling system that only promoted healthier foods with a “healthy” label to a labeling system that only discouraged unhealthier foods with an “unhealthy” label. That experiment found that the benefits of the unhealthy labels on consumer understanding and purchase healthfulness were about twice as large as the effects of endorsement labels.[78] These studies highlight the importance of implementing labels that explicitly discourage consumption of unhealthy products to improve dietary behaviors.

SUMMARY

Diet-related disease remains a pressing public health concern in the US. Evidence indicates that food labels can play a useful role in addressing this challenge by encouraging consumers to make healthier purchases and prompting the food industry to reformulate their products to remove unhealthy nutrients. But food labels will only meet their potential to promote population health if companies are required to display them and consumers can easily use and understand them. New food labels should therefore be mandatory, shown prominently on the front of package, interpret product healthfulness for consumers (rather than only providing numeric information), and explicitly discourage unhealthy products (rather than only promoting healthier options).

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