

Clear Systems, Clear Labels, Informed Choices: Why Summary Scores Are Not Enough

Key Messages

- Summary scores combine nutrients to encourage (e.g., fiber, protein) and nutrients to limit (e.g., sodium, sugars, saturated fats) into a single score, which can benefit certain products by creating a halo effect for consumers, even when those products contain excess levels of nutrients to limit.
- Summary scores look at the overall nutritional quality of a food product—they do not clearly inform consumers about products that contain excessive nutrients of concern.
- They obscure ultra-processed risk, often making unhealthy products that contain excessive levels of nutrients of concern appear healthy.
- Summary score systems face widespread gaps in monitoring, enforcement and compliance due to their complicated nature, often resulting in voluntary labeling and selective industry practices while limiting their ability to deliver clear nutrition information.
- Warning labels based on a strong nutrient profiling model are more effective than summary scores in helping consumers quickly identify products high in nutrients of concern.

Introduction

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Front-of-package labeling (FOPL) should provide convenient, relevant and readily understood nutrition on packaged foods to help all consumers make informed food purchases and healthier eating choices. FOPL is based on a nutrient profiling model (NPM), a tool that provides a standardized way to assess a food's nutritional quality to prevent disease and promote health. (1)

Summary score nutrient labeling is a type of FOPL that provides a quick, overall assessment of a food's nutritional quality with a single score, symbol or icon. These scores are based on a NPM that weighs positive nutrients (e.g., fiber, protein, vitamins, etc.) and nutrients of concern (e.g., sugar, sodium, saturated fat, etc.). However, these summary scores are often flawed, leading to confusing and sometimes misleading messages about which products are healthy.

Examples of summary scores include Nutri-Score, Nutri-Grade and the Health Star Rating. Summary score systems contrast with nutrient-specific labeling, which focuses on individual nutrients to limit in order to prevent noncommunicable diseases. Nutrient-specific FOPL systems—such as warning labels—are more effective in helping consumers quickly identify ultra-processed products (UPPs) high in nutrients of concern like sodium, sugars and saturated fats. (2)

This document explores the limitations of summary score labels like Nutri-Score, Nutri-Grade and other variations, highlighting why they do not meet the objective of nutrient profiling and FOPL. For more information on FOPL please see [GHAI's Evidence Sheet: Front-of-Package Labeling](#). For more information on NPMs, please see [GHAI's Nutrient Profile Models Position Paper](#).

Types Of Summary Scores

NUTRI-SCORE

The Nutri-Score system was developed in France and is based on an adapted version of the United Kingdom's Food Standards Agency nutrient profile systems. (3)

France introduced the Nutri-Score label as a voluntary measure in 2017 as part of the long-standing French National Nutrition and Health program launched by the Ministry of Health to improve the health of the French population. The label has since been adopted voluntarily in six other European countries: Spain, Belgium, Germany, Luxembourg, Switzerland and the Netherlands. (4)

The Nutri-Score NPM uses an algorithm that includes "positive" and "negative" nutrients. Positive nutrients include protein, fiber, fruit, vegetables and legumes, while negative nutrients include energy, saturated fatty acids, sodium, total sugars and non-nutritive sweeteners for beverages. (5) This score is equivalent to a letter ranging from A (healthiest) to E (most unhealthy) (see Figure 1). Based on the algorithm, Nutri-Score presents the relative overall nutritional composition of a food product compared to similar products, and its goal is to indicate a product's healthfulness. (6)

FIGURE 1:
The Nutri-Score label



The Nutri-Score label does not effectively influence consumer purchasing decisions or promote healthier food choices.

The Nutri-Score system is often found to be more effective when measuring outcomes such as consumer preference or ability to identify healthfulness. Consumer preference should not be a relevant indicator of effectiveness since FOPL's main objective is to provide convenient, relevant and readily understood nutrition information on packaged foods to help all consumers make informed food purchases and healthier eating choices. Additionally, a preferred label may not drive consumers' behavioral change, potentially missing the public health goals of FOPL. (7) Due to the voluntary nature of the label, few studies have examined the real-world impact of Nutri-Score on purchase patterns, consumption or food supply in countries where it is used. (8) However, studies assessing its impact when voluntarily implemented suggest that Nutri-Score labels may not effectively influence consumer purchasing decisions or promote healthier food choices:

- A study conducted in French supermarkets tested four types of FOPL to see how they influenced shopping habits: Nutri-Score, multiple traffic-light/Guideline Daily Amounts hybrid, a bar graph label and the SENS label (which advises on how often to eat the product). When Nutri-Score was added to packaged products, shoppers bought 14% more of the products perceived to be the healthiest, like ready meals. However, Nutri-Score labels had no impact on purchases of less healthy foods. (9)
- In a 2020 pilot study in the Netherlands, researchers found that while participants noticed the Nutri-Score labels on the packages, the labels did not significantly affect attitudes, taste perceptions and purchase intentions. (10)

Warning labels are more effective than Nutri-Score at helping consumers identify when a product is high in nutrients of concern.

The Nutri-Score label has commonly been found to be the least-effective FOPL scheme in informing consumers of products that are high in nutrients of concern.

- **Multiple studies show that warning labels are more effective than Nutri-Score** and other FOPL, like multiple traffic light and Health Star Rating, at helping consumers accurately identify unhealthy products and encourage healthier purchasing decisions. (7, 11, 12)
- **Nutri-Score’s ability to significantly alter food choices remains inconsistent**, as experimental findings reveal, with some studies reporting minimal impacts. (9, 10, 13, 14) These findings are part of quantitative laboratory and field studies that assessed the effectiveness of Nutri-Score compared to other FOPL. (11, 15-17)

- **Nutri-Score labels have not proven successful in reducing purchase or consumption of unhealthy UPPs high in nutrients of concern.** (9, 16, 18-20) This lack of success is despite Nutri-Score labels testing relatively well in surveys and laboratory experiments in terms of consumer acceptability and ability to correctly rank the healthiness of a given product set correctly, like multiple traffic-light labels.

Concerns about Nutri-Score’s evidence base focus on the potential bias of the research.

Much of the research supporting Nutri-Score has been conducted by its developers, raising concerns about potential publication bias. A 2024 study by Peters et al., highlights several key issues: (21)

- Most favorable studies on Nutri-Score were authored by its developers.
- Independent studies tend to report less-favorable or negative findings.
- Insufficient scientific evidence supports Nutri-Score as an effective public health tool.
- No country has implemented Nutri-Score mandatorily, limiting its real-world impact. In contrast, warning labels have demonstrated greater effectiveness at discouraging purchases of unhealthy products, supported by robust, real-world evaluations.

Nutri-Score may mislead consumers about UPPs.

Many UPPs that are high in nutrients of concern can still receive a Nutri-Score rating

of A or B if they contain added positive nutrients like dietary fiber, creating an incentive for the food industry to reformulate products to appear healthier without improving overall nutritional quality. As a result, Nutri-Score does not consistently help consumers identify UPPs. Although recent updates have improved its ability to capture most UPPs, the core issue lies in how the system is visually interpreted. Products rated C, D or E are intended to signal medium to poor nutritional quality, yet a C rating often appears neutral to consumers. When applied to UPPs, this can create a misleading health halo. (22)

Additionally, research in color psychology shows that the use of multiple colors on food and beverage packaging can increase visual appeal and trigger affect-driven responses, leading consumers to rely more on emotion than on deliberate, analytical judgment when making choices. (23–25) The use of green to highlight specific nutrients may further contribute to misperceptions that a product is healthier than it actually is. (26–28)

- In 2025, researchers ran multiple tests to see if consumers' opinions of a product with a Nutri-Score label were affected by what they already expected about the product's nutrition. Participants were first given a food product (e.g., cereal bar, brownie, chocolate cake) with no label and were then shown the product with its Nutri-Score. When consumers expected a product to be unhealthy (i.e., assumed it would have an E score) but saw that it displayed a better-than-expected score (C or higher), it reduced feelings of guilt associated with their consumption and increased their purchase intentions. (29)

Voluntary implementation of Nutri-Score allows the food industry to avoid labeling.

Nutri-Score is implemented voluntarily, and, in many cases, companies choose not to apply the Nutri-Score label. In 2024, Danone, a food and beverage company, announced that it would no longer apply Nutri-Score labels on their dairy products following updates to the label's algorithm that lowered their products' scores. (30) The company also stated its disagreement with the algorithm's revision, which reclassified drinkable dairy and plant-based alternatives as beverages, arguing that this change may lead to consumer confusion. (30) In the first year of Nutri-Score's implementation in Belgium, only 10% of products on the market featured the label; when the label was used, it was mostly displayed on products with A or B ratings. (31)

Implementing a scoring system like Nutri-Score requires detailed nutrition information on packaging—such as percentage of fruits, vegetables and legumes, along with fiber and protein content. In many countries, these data are unavailable or only partially disclosed, and mandatory declaration requirements are often limited or absent, creating significant challenges for implementation and monitoring. (32, 33)

HEALTH STAR RATING

New Zealand and Australia adopted a voluntary labeling scheme called Health Star Rating in 2014. The Health Star Rating system assesses the “healthiness” of foods on a scale of 0.5 stars (least healthy) to 5 stars (healthy) based on their content of risk and positive nutrients (see Figure 2). Risk nutrients include energy, saturated fat,

sodium and sugar content, and positive nutrients include protein, fiber, fruit, vegetable, nuts and legumes. (34)

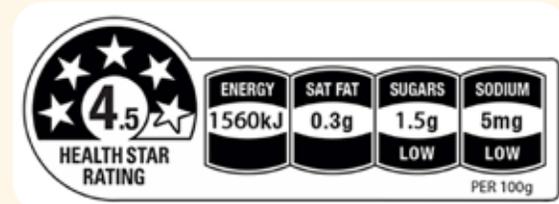
Voluntary implementation of Health Star Rating allows the food industry to avoid labeling.

Several studies have investigated the adoption and efficacy of Australia and New Zealand’s Health Star Rating and found that most products did not feature this FOPL.

- A 2021 study examined nutrition and health claims on 340 dairy yogurt products sold in five Australian supermarkets to assess compliance with the Australian Food Standards Code. The study found that 88% of the products did not display the Health Star Rating on their packaging. Researchers calculated the Health Star Rating for all products, regardless of whether it was shown on the package, and found an average rating of 3.5 out of 5 stars. Just over half of the products scored above this average (considered healthier), while 44% scored below (less healthy). Among the healthier products, only 14% displayed their Health Star Rating, and among the less healthy ones, just 10% did. (35) Similarly, evidence shows that breakfast cereals with added protein are more likely to display the Health Star Rating and can achieve relatively high scores despite higher levels of sodium and sugars—highlighting how added protein may offset unfavorable nutrients in summary scoring systems. (36)
- Further studies have shown that the Health Star Rating system misrepresents UPPs. One analysis found that 75% of such foods displayed at least 2.5 stars despite being among the least healthy, a result of design flaws in the rating system and weak

FIGURE 2:

The Health Star Rating labeling scheme



oversight. (37) Another study of 6,000 products found 63% contained added sugars, with no evidence that Health Star Rating discouraged their use or encouraged reformulation. (38) Compounding these issues, the food industry has failed to meet its own uptake targets: despite a generous goal of 70% adoption by November 14, 2025, uptake remains at only 37% after 11 years of implementation—underscoring the limitations of voluntary labeling schemes. (39)

Health Star Rating has not had a significant effect on food purchases.

- Several studies found that the Health Star Rating system has little to no effect on consumer purchasing behavior. A systematic review reported no significant impact on calories, sugar, saturated fat or sodium purchased. (40) Similarly, an evaluation found that Health Star Rating had no effect on consumer purchases. (41)
- A study conducted in New Zealand compared the performance of the red, octagonal Vienna Convention traffic ‘STOP’ sign and a single star (low nutritional value) Health Star Rating label, each presented on cold breakfast cereals. A large, significant

effect was found from the octagonal front-of-package label compared to the control (no label), while no significant difference was found between the Health Star Rating and the control (no label). (42)

Other Summary Scores

Other summary scores include Nutri-Mark and nutrient profile systems like Food Compass and the Choices Programme logo; less evidence is available on these labeling schemes.

NUTRI-MARK

In 2024, the Abu Dhabi Quality and Conformity Council and the Abu Dhabi Public Health Centre launched the mandatory Nutri-Mark labeling system to be implemented in late 2025 (see Figure 3). (43) The Nutri-Mark label assigns food products a letter grade from A to E, with A representing the highest nutritional value. This scoring approach is similar to Nutri-Score, the voluntary European labeling system whose scale stops at grade D. Nutri-Mark's scoring system evaluates a product's nutritional content per 100 grams or 100 milliliters by assigning both positive and negative points. Negative points are given for nutrients that should be limited—energy, saturated fat, total sugars and salt (sodium) and positive points are awarded for beneficial components such as protein, fiber and the percentage of fruits, vegetables and legumes. (44)

FOOD COMPASS

Food Compass is a NPM that incorporates information on macronutrients, vitamins, minerals, food ingredients, processing (including ultra processing), additives and trace lipids in different products. (45) Unlike the previous summary scores presented,

FIGURE 3:

Abu Dhabi's Nutri-Mark label



Food Compass is not itself a FOPL scheme but informs development of a FOPL. Its aim is to provide individuals and organizations (including consumers, policymakers, retailers, food manufacturers and health care professionals) with a tool to help determine the general healthfulness of different foods, beverages, mixed meals and restaurant meals through a score. Food Compass has not yet been implemented as a basis for any country's FOPL system. (45)

Food Compass version 1.0 was developed in 2021 and creates a score using a unique algorithm and evaluates foods across nine domains (nutrient ratios, vitamins, minerals, food ingredients, additives, processing, specific lipids, fiber and protein and phytochemicals). (46) Domain scores are summed to create a final Food Compass score ranging from 1 (least healthy) to 100 (most healthy) for all foods and beverages (see Figure 4).

In 2022, Food Compass version 2.0 was developed to better assess the healthfulness of foods and beverages. A key update to the scoring system is that it now ranges from 1 (least healthy) to 10 (most healthy) instead of from 1 to 100. The updated version also includes sugar in the food ingredients

FIGURE 4:

Food Compass version 1.0 scores



Based on observed ranges, a Food Compass Score ≥ 70 was selected a reasonable cutpoint for foods or beverages to be encouraged; 31-69, to be consumed in moderation; and ≤ 30 , to be minimized.

domain, higher scoring for dietary fiber as a positive attribute and broader scoring for food processing (i.e., greater contrast with unprocessed/minimally processed foods receiving positive scores). (47)

There are a few key limitations of the Food Compass:

- While Food Compass aims to address the triple burden of malnutrition, its use as a FOPL scheme is a poor fit for the condition. FOPL is not designed to address undernutrition. Mixing positive and negative attributes in the score can dilute the focus on the critical nutritional concerns that FOPL is designed to draw consumers' attention to.
- Incorporating positive attributes and nutrients in its evaluation rather than just nutrients of concern can lead to misleading health halo effects and make it easier for the food industry to manipulate scores. Positive attributes do not override the problems associated with nutrients of concern.
- The single score that Food Compass produces is complex and unclear to

consumers, as it combines many attributes that are not obvious or easy to understand.

- From an implementation and monitoring standpoint, the Food Compass model is very complex. Most Nutrition Facts labels implemented globally do not include all the components considered in the Food Compass, making the model difficult to apply and enforce in policy. (48)

CHOICES PROGRAMME LOGO

The Choices International Foundation developed a NPM to identify food products eligible for a positive FOPL, with the goal of encouraging consumers to select healthier food options and food companies to reformulate their food products. These criteria are used to determine if a product will carry the positive Choices Programme logo (see Figure 5). (49)

The Choices Programme logo system introduced a 5-level classification that ranks food products by healthiness, with level 1 being the healthiest and level 5 the least healthy. Foods are divided into two main

FIGURE 5:

Choices Programme positive logo



categories—basic foods (e.g., vegetables, unprocessed meats, grains, bread) and non-basic foods (e.g., savory snacks, sweet snacks, juices)—and further grouped into subcategories based on their composition (fruits and vegetables, water, complex carbohydrates, etc.). (50) To be assigned to a product group, an item must meet the 70% rule: At least 70% of the product must consist of the core raw material of that group. For example, a dairy product must contain at least 70% of dairy ingredients to be assigned to that group. (49, 50) The Choices Programme logo is voluntarily implemented in the Netherlands, France, Czech Republic, Poland, United States, Argentina, Nigeria and Zimbabwe. (51)

The most recent update from 2025 introduces several refinements compared to the 2021 version. It expands the system by adding specific criteria for plant-based

alternatives, ensuring that products such as plant-based milks and meat substitutes are classified alongside their animal-based counterparts only if they meet defined thresholds for protein and key micronutrients. The update also incorporates non-sugar sweeteners as a negative factor. As a result, products containing non-sugar sweeteners can no longer receive a positive FOPL, whereas the previous version did not address these types of sweeteners. Finally, it tightens the limits on industrially produced trans fats to fully align with the latest WHO recommendations, replacing the earlier, less stringent thresholds. (52)

A few key limitations of the Choices Programme logo:

- It is a positive label, meaning it only tells consumers that a product meets the nutrient criteria set by the Choices International Foundation's NPM and does not indicate whether the product is unhealthy overall.
- The Choices Programme logo does not lead to significant changes in consumer purchasing behavior. (53)
- The Choices International Foundation was founded and funded by major industry actors like Campina, Unilever and Friesland Foods. (54) This raises concerns about conflicts of interest, as industry-funded organizations may be incentivized to align their research, policy recommendations and labeling standards to favor commercial interests. (55, 56)

Conclusion

Although some countries have adopted FOPL systems that rely on summary indicators or scoring-based NPMs, they fall short of FOPL’s core objective—helping consumers identify products high in nutrients of concern, make healthier choices and ultimately reduce their intake of these nutrients of concern in line with World Health Organization recommendations to prevent diet-related noncommunicable diseases. These models often fail to change purchasing behavior, do little to highlight nutrients of concern and can even give consumers the false impression that UPPs are healthy.

- Summary score labels typically average positive and negative nutritional attributes, which can mask the presence of harmful ingredients like added sugars, sodium or saturated fats. As a result, UPPs can still receive relatively high scores, providing a misleading impression of a product’s overall healthfulness.
- Additionally, these systems rarely prompt significant changes in purchasing behavior or drive meaningful product reformulation by the industry.
- Due to the complicated nature of summary score systems’ implementation, there are widespread gaps in monitoring, enforcement and compliance, especially in places where their use is voluntary. In many cases, the food industry selectively labels products, undermining the main goal of FOPL—to provide clear, straightforward nutrient information to consumers.

Across systems:

- Nutri-Score and Health Star Rating both average positive and negative nutrients, often allowing UPPs to receive high scores. These averages mislead consumers and fail to discourage unhealthy purchases. Further, both systems are voluntarily implemented, giving the food industry the autonomy to pick and choose what products to label.
- Nutri-Mark and Food Compass use complex scoring algorithms that are difficult for consumers to interpret; neither system has been widely implemented or evaluated.
- The Choices Programme uses a positive labeling approach that does not warn consumers about unhealthy products and is influenced by industry funding, raising concerns about conflicts of interest.

Conflict of interest-free research shows that warning labels using an evidence-based NPM create a clearer and more impactful approach for guiding consumers than summary score systems. Warning labels are more effective at helping consumers make healthier choices by reducing their intake of harmful nutrients and UPPs.

NPM Approaches and Potential Limitations of Summary Score Systems

NUTRI-SCORE

**NPM Approach:**

Averages positive (i.e., protein, fiber) and negative (i.e., saturated fat, sugar) nutrients

Potential Limitations:

This rating system lets many UPPs receive A or B scores, giving consumers a false impression of healthfulness despite their known health risks

HEALTH STAR RATING

**NPM Approach:**

Averages positive (i.e., protein, fiber) and negative nutrients (i.e., saturated fat, sugar)

Potential Limitations:

Fails to discourage unhealthy purchases

NUTRI-MARK

**NPM Approach:**

Dual scoring system that assigns positive points for nutrients that should be encouraged (i.e., protein and fiber) and healthy ingredients (i.e., fruits and vegetables), and negative points for nutrients that should be limited (i.e., salt, sugar, etc.)

Potential Limitations:

May allow UPPs to get a lower (healthy) score if a product contains positive nutrients or fruit

FOOD COMPASS

**NPM Approach:**

Incorporates information on macronutrients, vitamins, minerals, food ingredients and processing using an algorithm

Potential Limitations:

Has not been implemented in any policy areas. NPM may be too complex for implementation

THE CHOICES PROGRAMME LOGO

**NPM Approach:**

Foods are divided into two categories: 1) basic foods (vegetables, unprocessed meats, grains) and 2) non-basic (savory snacks, sweet snacks, juices), where 70% of the product must be core raw material (e.g., dairy product must contain 70% of dairy ingredients)

Potential Limitations:

According to studies, the Choices Programme Logo fails to change consumer purchasing behavior and does not indicate when a product is unhealthy

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