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Introduction

People living in the United States consume too many calories and are not meeting food group (e.g., fruits, vegetables, whole grains) and nutrient (e.g., sodium, sugar) recommendations; however, consumer trends are changing and demand for healthier products is increasing.¹ Four of every five consumers, across all ages, express concern about the healthfulness and nutritional content of their food. Additionally, consumers are seeking more nutrient-dense foods (i.e., foods that are high in nutrients, such as vitamins and minerals, but relatively low in calories) and aiming to reduce foods and beverages that contain ingredients with potential negative effects on health, such as added sugar and sodium.² As a result, the food and beverage industry is responding to better align food and beverage products with the 2015-2020 Dietary Guidelines for Americans (DGAs).



The DGAs recommend that children, adolescents, and adults follow a healthy eating pattern across the lifespan, instructing adults and children to shift to healthier food and beverage choices; focus on variety, nutrient density, and portion size; reduce calories from added sugars and saturated fats; and reduce sodium intake.¹ Further, the DGAs state that all of the food and beverage choices an individual makes matter in maintaining a healthy body weight, consuming the recommended amount of nutrients, and reducing the risk for chronic disease.

Food and beverage companies and restaurants have started to reformulate or introduce new products to provide more vegetables, fruits, whole grains, low-fat and fat-free dairy, and a greater variety of protein foods that are nutrient dense, while also reducing sodium, added sugars, and saturated fats. They are engaging in these activities in an effort to satisfy the increased consumer demand for healthier foods and beverages, while improving their bottom lines. Companies selling lower-calorie foods and beverages have seen increases in sales, higher profit margins, superior profit growth, and stronger reputation ratings than their competitors.³ Over the years, there has also been a proliferation of different nutrition standards and recommendations developed or adopted by companies in an attempt to guide consumers in identifying healthier options.

Rationale

As consumers shift their purchases and look for healthier food and beverages in the marketplace, all products are not created equal. Evidence suggests that a high percentage of food products featuring marketing and nutrition claims about health focus on positive nutrient characteristics such as fiber, vitamin or mineral content, while downplaying undesirable nutrients including saturated and trans fats, sodium, and added sugar.^{4,5} In response, nonprofit organizations, scientific bodies, self-regulatory entities, media companies, manufacturers, retailers, and researchers have developed nutrition standards to identify healthier, or “Better-For-You” foods (BFY). However, this myriad of standards and benchmarks has led to confusion, both in the marketplace as to what is healthy, and the research community as to which standards are evidence-based. The multiple standards have also made it difficult to evaluate the extent to which public health interventions are consistent with the recommendations of the DGAs.

Healthy Eating Research, a national program of the Robert Wood Johnson Foundation, convened a Scientific Advisory Committee: Healthy Eating Research Better-For-You Foods Scientific Advisory Committee, comprised of prominent researchers, nutritionists, and policy experts,^a to review existing nutrition standards and identify those that most closely align with the evidence-based recommendations in the DGAs.^b The review of standards for this project was guided by the committee's view that healthy eating, as informed by the DGA, includes nutrient-dense forms of all food groups and limits saturated fats and trans fats, added sugars, and sodium.

Based on the process used to assess the various nutrition standards, the committee developed a framework that included a set of criteria and key questions that can be used to evaluate BFY standards. The resulting tool represents a framework of elements the committee considered to be critical components of any BFY nutrition standard. By considering key facets of the DGAs in BFY product standards and by promoting standards that support a healthy diet, retailers, manufacturers, researchers, and public health professionals can more consistently help shift consumers toward healthier choices.

Methods and Key Findings

The goal of the committee was to review existing standards for defining or categorizing healthier foods and to analyze their strengths and weaknesses. While this was not intended to be an exhaustive review of all existing standards, the committee set out to review standards of major retailers in the United States and other widely referenced guidelines (e.g., Disney, Children's Food and Beverage Advertising Initiative, General Services Administration/Health and Human Services guidelines, etc.) that could be used in a retail setting.

The committee began work by identifying existing BFY standards, recommendations, and guidelines from scientific bodies, national organizations, retailers, self-regulatory entities, government agencies, and public health organizations. The committee identified a set of 23 standards for review (see Appendix A for the full list). Selected standards focused on promoting healthy food groups from the DGAs, set limits for over-consumed food groups and nutrients, and included standards or categories for healthier packaged foods. Ultimately, the committee eliminated 11 of the standards because they were designed to predominately identify healthy meal options or were not specific enough—for example, they did not include nutrition standards for individual products. The remaining 12 product-oriented standards were selected for closer review and analysis (see Table 1). Due to the differences among sets of

nutrition standards in applicable settings, type and category of food product, and food and nutrient qualities, much variation existed among the final 12 selected standards.

Table 1: Better-For-You Standards Selected for Evaluation (alphabetical order)

Children's Food and Beverage Advertising Initiative (CFBAI) Category-Specific Uniform Nutrition Criteria
Choices Nutrition Criteria
Disney Nutrition Guideline Criteria
Guide to Creating a Front of Pack (FoP) Nutrition Label for Pre-packed Products Sold through Retail Outlets
Guiding Stars
Healthy Eating Research Minimum Stocking Levels and Marketing Strategies of Healthful Foods for Small Retail Food Stores
Interagency Working Group on Food Marketed to Children
National Academies of Science Front-of-Package Nutrition Rating Systems and Symbols: Promoting Healthier Choices
National Alliance for Nutrition and Activity Model Beverage and Food Vending Machine Standards
Partnership for a Healthier America Healthier Food and Beverage Product Calculator
USDA Smart Snacks Nutrition Standards
Walmart Great for You

One key outcome of the committee's work was the identification of a list of qualities and characteristics on which BFY standards should be evaluated. The committee focused on the evidence and key recommendations provided in the DGAs as the basis for identifying each component. Consistent with the DGAs, the committee defined a strong BFY nutrition standard as one that promotes a healthy eating pattern, nutrient dense food options, and contains limits on nutrients and food components that are over-consumed.¹

The second key outcome of the committee's work was the development of the Assessing High Quality Nutrition Standards (AHQNS) framework, which serves as an initial step in evaluating the ability of each nutrition standard to identify products that support a healthy eating pattern.

a See the Acknowledgements section for a complete list of committee members.
b This project did not include a review of beverages, as Healthy Eating Research convened a similar committee in 2012 to develop a comprehensive set of age-based recommendations defining healthier beverages—Recommendations for Healthier Beverages (2013).

The resulting tool represents a framework of elements the committee considered to be critical components of any BFY nutrition standard. The AHQNS tool is further described below, but it is important to note that validation of the tool was outside the scope of this project. This framework should be viewed as an important first step and the committee encourages further efforts to refine and validate it.

While the DGAs clearly identify the need for changes to the food environment broadly, evaluation of product placement, marketing and other environmental factors remain outside of the scope of this committee. Healthy Eating Research's Recommendations for Responsible Food Marketing to Children and Minimum Stocking Levels and Marketing Strategies of Healthful Foods for Small Retail Stores offer an in-depth discussion of marketing and contextual factors that also impact food products promoted, purchased and consumed.⁶

Identified Components of an Evidence-Based Better-For-You Product Standard

The DGAs include a number of recommendations related to food choice: follow a healthy eating pattern across the lifespan; focus on variety, nutrient density, and amount; limit calories from added sugars, saturated fats, and reduce sodium intake; and shift to healthier food choices.¹ As such, the committee used these evidence-based recommendations as the basis for evaluation of all product nutrition standards and for the development of the AHQNS framework. Foods promoted and sold as BFY items should align with the DGAs by containing nutrient-dense servings from key food groups and assisting consumers in following a healthy eating pattern that is low in added sugars, saturated fats, and sodium.

- **Healthy eating pattern:** According to the DGAs, a healthy eating pattern includes a variety of vegetables and fruits; whole grains; fat-free or low-fat dairy; protein foods, including seafood, lean meats and poultry, eggs, legumes (beans and peas), and nuts, seeds, and soy products; and oils. An underlying premise of the DGAs is that nutritional needs should be met primarily through foods. Thus, the committee recommended that foods qualifying as BFY must contribute in some way to the intake of fruits, vegetables, whole grains, proteins, and low-fat or non-fat dairy, and contain naturally occurring nutrients rather than those added during the manufacturing process.
- **Nutrient dense servings:** The DGAs recommend that consumers choose nutrient-dense foods and beverages across and within all food groups in place of less healthy choices. All forms of foods, including fresh, canned, dried, and frozen, can be included in healthy eating patterns; however, BFY standards should promote and prioritize foods and beverages that provide naturally occurring vitamins and minerals that contribute to adequate nutrient intakes or may have positive

health effects, with little or no solid fats and added sugars, refined starches, and sodium. Vegetables, fruits, whole grains, seafood, eggs, beans, and peas, unsalted nuts and seeds, fat-free and low-fat dairy products, and lean meats and poultry—when prepared with little or no added solid fats, sugars, refined starches, and sodium—are considered nutrient-dense foods (see Table 2).

- **Nutrients and Food Components to Limit:** In addition to minimum contributions from food groups, standards for BFY foods should include maximums for over-consumed nutrients. The DGAs clearly recommend limits on saturated and trans fats, added sugar, and sodium (see Table 3).

Table 2: Recommendations for Nutrient-Dense Foods^{1,7}

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- **Fruits and Vegetables:** BFY standards should promote whole fruits and vegetables, with emphasis on products that do not contain added solid fats, sugars, refined starches and sodium. If fruit juice is allowed under the product standards at all, it must be 100% juice with no added sugar and sold in age-appropriate portion sizes.⁸
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- **Whole Grains:** BFY standards should promote whole grains and limit the intake of refined grains. Products made with refined grains, especially those high in saturated fats, added sugars, and/or sodium, such as cookies, cakes, and some snack foods, should also be limited. Standards should prioritize grain products containing only 100% whole grain ingredients, and, as a minimum, whole grain products should meet the definition of whole-grain rich as defined by the National Academies of Sciences (formerly the Institute of Medicine).^{1,9}
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- **Fat-Free and Low-Fat Dairy:** Healthy eating patterns include fat-free and low-fat (1%) dairy, including milk, yogurt, cheese, or fortified soy beverages. Increasing the proportion of dairy intake from fat-free or low-fat milk or yogurt and decreasing the proportion from cheese would decrease Americans' consumption of saturated fats and sodium and increase potassium, vitamin A, and vitamin D provided from the dairy group.¹ BFY standards should promote fat-free or low-fat dairy including, milk, milk- and yogurt-based products, yogurt, cheese, and/or fortified soy-based dairy alternatives with limits on added sugar and sodium.
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- **Proteins:** BFY standards should promote a variety of protein foods in nutrient-dense forms including seafood, lean meats and poultry, eggs, legumes (beans and peas), and nuts, seeds, and/or soy products. Standards should specifically include plant-based proteins, to ensure a variety of healthy protein sources are available among products.¹
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Table 3: Recommendations for Nutrients and Food Components to Limit¹

- **Added Sugar:** Evidence has shown that diets lower in added sugars are associated with reduced risk of obesity, type 2 diabetes, cardiovascular disease (CVD) in adults, and the development of dental caries in children and adults.^{10,11} BFY standards should limit added sugar to no more than 10% of total calories.¹ The committee notes that until full implementation of the updated Nutrition Facts Label with specific reference to added sugar occurs, this recommendation may be difficult to achieve. However, BFY standards are beginning to set goals and limits to address added sugar. The committee supports movement in this direction and encourages all BFY standards to consider added sugar in their development and future updates.
- **Saturated Fat:** Intake of saturated fats should be limited to less than 10% of total calories per day while keeping total dietary fats within the calorie limits. Research has shown that replacing saturated fats with unsaturated fats, especially polyunsaturated fats, is associated with reduced blood levels of total and LDL cholesterol, as well as lower risk of heart attacks and cardiovascular disease-related death.¹² BFY standards should limit saturated fat, while promoting foods rich in healthy fats such as fish, nuts, and nut butters.
- **Trans Fat:** A number of studies have observed an association between increased intake of trans fats and increased risk of CVD.¹³ BFY standards should require products to contain 0g of trans fat and help consumers limit intake of trans fats to as low as possible by limiting foods that contain synthetic sources of trans fats, such as partially hydrogenated oils.
- **Sodium:** Americans consume on average 3,400 milligrams (mg) of sodium per day—nearly 50% more than the 2,300 mg limit recommended by federal guidelines. Too much sodium can raise blood pressure, which is a major risk factor for heart disease and stroke.¹⁴ Reducing sodium intake has the potential to prevent hundreds of thousands of premature deaths and illnesses.¹⁵ As such, BFY standards should promote foods lower in sodium.¹⁶

Assessing High Quality Nutrition Standards (AHQNS) Framework

The AHQNS framework tool was created by the committee as a way to evaluate the strength of product nutrition standards based on the above guiding principles. The framework was modeled after a measurement tool for assessment of multiple systematic reviews (AMSTAR),¹⁷⁻¹⁹ and is comprised of key components that the committee identified as essential to include in BFY standards to ensure consistency with the goals of the DGAs and other evidence-based recommendations. Under each key component is a series of questions intended to assist in evaluating whether the standard is in alignment with the DGAs and meets nutritional requirements as set forth by the committee. For example, one question relates to whether vegetables are a required element of the standard; a second question asks if the standard exempts or automatically allows vegetables prepared with no added solid fats, sugars, refined starches, and sodium; and a third question asks if the standard requires a sodium limit for vegetables. Points are awarded based on “yes” answers to each question so that more points are awarded for standards that are most consistent with all components. In the case of vegetables, more points would be awarded to standards that include plain or low-sodium vegetables as a category; however, some points would still be awarded to those standards that include vegetables, but do not address concerns about solid fats, sugars, refined starches, and sodium within the category. The full AHQNS tool and instructions for how to apply it are included in Appendix B.

Achieving a high score or improving upon an existing score using the AHQNS checklist could be a competitive incentive for industry and organizations—public, private, or nonprofit—to measure and strengthen their BFY nutrition standards.

High-Quality Standards

To determine the scores for each of the 12 selected BFY standards, two committee members scored the standards using the AHQNS framework. Members reviewed scores for each BFY standard and discussed their respective results including any inconsistency between the scores until consensus was achieved. The 12 BFY standards reviewed for this project all received a score of between 11 and 23 using the AHQNS tool. The highest possible score a standard can receive using the AHQNS tool is 29. Table 4 breaks the standards reviewed into four ranges based on final AHQNS score: (1) high consistency with the DGAs (score of 21-29), (2) consistent with DGAs, but room for improvement (score of 16-20), (3) some consistency with DGAs (score of 11-15) and (4) low or no consistency with the DGAs (score of 0-10).

Table 4: Consistency of Standards with the Assessing High Quality Nutrition Standards Framework

Nutrition Standard	AHQNS Score	AHQNS Range
National Alliance for Nutrition and Activity Model Beverage and Food Vending Machine Standards	21-29	Highest consistency with Dietary Guidelines, requires all food groups be represented, includes few exemptions, and sets strong limits for undesirable nutrients and food components
Partnership for a Healthier America Healthier Food and Beverage Product Calculator		
Walmart Great For You		
Disney Nutrition Guideline Criteria	16-20	Consistent with Dietary Guidelines, but may include exemptions, not require all food groups or not set strong limits for undesirable nutrients and food components
Guiding Stars		
Healthy Eating Research Minimum Stocking Levels and Marketing Strategies of Healthful Foods for Small Retail Food Stores		
Interagency Working Group on Food Marketed to Children		
USDA Smart Snacks Nutrition Standards		
Children's Food and Beverage Advertising Initiative (CFBAI) Category-Specific Uniform Nutrition Criteria (2011 Criteria)	11-15	Some consistency with Dietary Guidelines, may focus more on nutrients than food groups, and may include exemptions, not require all food groups or not set strong limits for undesirable nutrients and food components
Choices Nutrition Criteria		
Guide to Creating a Front of Pack (FoP) Nutrition Label for Pre-Packed Products Sold Through Retail Outlets		
National Academies of Science Front-of-Package Nutrition Rating Systems and Symbols: Promoting Healthier Choices		
	0-10	Low or no consistency with Dietary Guidelines



The three standards highlighted below received the highest scores under this initial use of the AHQNS. While many of the standards evaluated contained elements consistent with the DGAs, these BFY standards met the majority of the components the committee determined to be essential to promoting healthier products and may help stakeholders identify foods consistent with the goals of the DGAs. Scores for all BFY standards assessed are available upon request. These three standards are described in detail as examples of standards that may be helpful to the field in identifying healthier products in the marketplace.

Below is a brief description of each of the top scoring standards with details on strengths and weaknesses in alphabetical order.

■ **National Alliance for Nutrition and Activity (NANA), Model Beverage and Food Vending Machine Standards²⁰**

The NANA model vending standards were developed to provide a model for municipal, state, and federal government-leased or -operated vending machines or vending machines on public property. The standards also are used by hospitals, private workplaces, and others to support the health of their employees or visitors. The standards received a strong score due to their promotion of “an assortment of healthier food choices with more fruits, vegetables, whole grains, and fat-free/low-fat dairy products,” and lower amounts of saturated and trans fats, added sugars, and sodium. The standards require BFY foods to contribute to intake of nutrient-dense food groups and meet strict criteria for nutrients and food components to limit. The standards use a total sugar criterion, rather than the recommended limits on added sugar; however, the criteria provide both a percentage limit and a gram limit, which serves to limit products high in added sugars while consumers await the addition of added sugars to the Nutrition Facts Label. The NANA vending machine standards could be improved by eliminating the allowance for products that qualify based on at least 10 percent of the Daily Value of a naturally occurring nutrient of public health concern (calcium, potassium, vitamin D, or fiber), requiring smaller portion sizes for 100 percent juice, and limiting artificial trans fat ingredients. The NANA model vending standards received a score of 22 on the AHQNS assessment.

■ **Partnership for a Healthier America (PHA), Healthier Packaged Food and Beverage Product Calculator Criteria²¹**

The PHA Healthier Food and Beverage Product Criteria were created to allow retailers, manufacturers and distributors to easily identify healthier products to stock, sell, market, or merchandise. The criteria are based on the 2015 Dietary Guidelines for Americans and national expert recommendations. The standards received a strong score because they consider both the product’s nutrient quality, including factors such as saturated fat and sodium content,

and the product’s primary ingredients, such as whole grains or fruits and vegetables. The criteria require the first ingredient of a product to be one of the main food groups of the DGAs and set one of the lowest sodium standards evaluated at 1.2 mg/1 calorie. The addition of the online calculator makes these standards user-friendly, however the committee urges PHA to consider making public the full set of standards to further assist stakeholders. The PHA criteria could be improved by establishing a threshold to limit added sugar in all products, adding a maximum serving size for 100 percent juice products, and by restricting artificial trans fat ingredients. The PHA criteria received a score of 21 on the AHQNS assessment.

■ **Walmart, Great for You Icon²²**

The Walmart Great For You icon was developed to help Walmart customers identify BFY products within their private brands, Great Value and Marketside. The Great For You nutrition criteria were developed based on the nutrition science and authoritative guidance, including from the 2010 Dietary Guidelines for Americans, U.S. Food and Drug Administration, U.S. Department of Agriculture, and National Academies of Medicine (formerly the Institute of Medicine) and took into consideration recommendations from food and nutrition experts from the public and private sectors and leading health organizations. The criteria received a strong score due to their focus on encouraging consumers to select more fruits, vegetables, fiber-rich whole grains, low-fat dairy, nuts and seeds, and lean meats, while limiting the amount of total trans and saturated fats, sodium, and added sugars in the products promoted. The straightforward, two-step approach also improves usability, though this was not a criterion that was scored. The criteria do limit added sugar, however the standards could be improved by lowering the threshold of 10 percent of calories to align with the DGAs. Additionally, the Great For You sodium threshold for individual items should be reduced, as the threshold was higher than for many of the other nutrition standards evaluated. The Great For You criteria received a score of 23 on the AHQNS assessment.

While a number of widely recognized and referred to standards did not score in the top-tier range (High Consistency with DGAs), it is important to note that the nutrition standards and criteria for certain standards are often established based on food products available as well as ease of applicability in a particular setting. For example, the USDA Smart Snacks standards are still consistent with the DGAs, but as described above, may allow certain less healthy items based on exemptions, lack of emphasis on food groups, and weaker limits for less healthful nutrients and food components. In the case of Smart Snacks standards, they received fewer points based on the portion of fruit juice allowed, not requiring 100 percent whole grain, or not prohibiting low-nutrient-density, fortified foods. They also

have a number of exemptions for saturated fat and trans fat and do not address added sugar. In addition, it is important to recognize that some standards, like the Healthy Eating Research Minimum Stocking Levels and Marketing Strategies of Healthful Foods for Small Retail Food Stores, were not specifically designed to evaluate individual products and fell short in relation to the AHQNS assessment based on a lack of calorie limits, no sodium limits for certain products, allowing a higher percentage of added sugar for certain products, and not setting a trans fat limit.

Conclusion

The goal of the committee's review and recommendations for strong BFY criteria is to help reduce confusion over existing standards, improve consistency in how healthy foods are defined, assist stakeholders in more easily identifying and promoting BFY products in the marketplace, and strengthen research efforts in the field. In developing the AHQNS tool, and evaluating existing BFY standards, the committee recognizes the efforts currently underway by food and beverage companies, retailers, public health organizations and coalitions, researchers, and others to help encourage reformulation and to guide consumer choice, with the goal of promoting healthier products.

This evaluation of different standards is expected to guide public health nutrition research, policies, programs, and interventions. So many nutrition standards are available to public health researchers, however this analysis shows that few are highly consistent with the DGAs. Many allow exemptions and set nutrient targets that are weaker than what is recommended in the DGAs. Use of the AHQNS tool and the nutrition standards recommended can help ensure researchers maintain a rigorous evaluation process when designing interventions to drive consumers towards healthier choices and when evaluating the use of standards in the marketplace and other settings. In addition, food companies, retail establishments, and other organizations and entities that work with food companies and retailers can use the tool in evaluating and enhancing the standards and guidelines currently in place. The committee also looks to researchers to further evaluate and validate the AHQNS tool, as a rigorous validation of the tool was beyond the scope of this project.



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<http://healthyeatingresearch.org>.

References

1. U.S. Department of Health and Human Services and U.S. Department of Agriculture. 2015–2020 Dietary Guidelines for Americans. 8th Edition. December 2015. Accessed at <http://health.gov/dietaryguidelines/2015/guidelines/>.
2. Food Marketing Institute. U.S. Grocery Shopper Trends 2016. Arlington, VA. 2016.
3. Cardello H, Wolfson J, Yufera-Leitch M, Warren L, and Spitz M. Better-For-You Foods: An Opportunity to Improve Public Health and Increase Food Industry Profits. Hudson Institute. March 2013. Accessed at: <https://www.rwjf.org/content/dam/farm/reports/reports/2013/rwjf404967>.
4. Institute of Medicine. 2012. Front-of-Package Nutrition Rating Systems and Symbols: Promoting Healthier Choices. Washington, DC: The National Academies Press.
5. Lapierre MA, Brown AM, Houtzer HV, Thomas TJ. Child-directed and nutrition-focused marketing cues on food packaging: links to nutritional content. *Public Health Nutrition*. 2017 Apr;20(5):765-73.
6. Healthy Eating Research. Recommendations for Responsible Food Marketing to Children. January 2015. Accessed at <http://healthyeatingresearch.org/research/recommendations-for-responsible-food-marketing-to-children/>.
7. Dietary Guidelines Advisory Committee. 2015. Scientific Report of the 2015 Dietary Guidelines Advisory Committee: Advisory Report to the Secretary of Health and Human Services and the Secretary of Agriculture. Accessed at: <https://health.gov/dietaryguidelines/2015-scientific-report/PDFs/Scientific-Report-of-the-2015-Dietary-Guidelines-Advisory-Committee.pdf> (Part B, Chapter 2, p. 5).
8. Healthy Eating Research. Recommendations for Healthier Beverages. March 2013. Accessed at: <http://healthyeatingresearch.org/research/recommendations-for-healthier-beverages/>.
9. IOM (Institute of Medicine). 2010. School Meals: Building Blocks for Healthy Children. Washington, DC: The National Academies Press.
10. Dietary Guidelines Advisory Committee. 2015. Scientific Report of the 2015 Dietary Guidelines Advisory Committee: Advisory Report to the Secretary of Health and Human Services and the Secretary of Agriculture. Accessed at: <https://health.gov/dietaryguidelines/2015-scientific-report/PDFs/Scientific-Report-of-the-2015-Dietary-Guidelines-Advisory-Committee.pdf> (Part D, Chapter 6, p. 20).
11. Dietary Guidelines Advisory Committee. 2015. Scientific Report of the 2015 Dietary Guidelines Advisory Committee: Advisory Report to the Secretary of Health and Human Services and the Secretary of Agriculture. Accessed at: <https://health.gov/dietaryguidelines/2015-scientific-report/PDFs/Scientific-Report-of-the-2015-Dietary-Guidelines-Advisory-Committee.pdf> (Part D, Chapter 2).
12. Dietary Guidelines Advisory Committee. 2015. Scientific Report of the 2015 Dietary Guidelines Advisory Committee: Advisory Report to the Secretary of Health and Human Services and the Secretary of Agriculture. Accessed at: <https://health.gov/dietaryguidelines/2015-scientific-report/PDFs/Scientific-Report-of-the-2015-Dietary-Guidelines-Advisory-Committee.pdf> (Part D, Chapter 6, p. 12).
13. Dietary Guidelines Advisory Committee. 2015. Scientific Report of the 2015 Dietary Guidelines Advisory Committee: Advisory Report to the Secretary of Health and Human Services and the Secretary of Agriculture. Accessed at: <https://health.gov/dietaryguidelines/2015-scientific-report/PDFs/Scientific-Report-of-the-2015-Dietary-Guidelines-Advisory-Committee.pdf> (Part D, Chapter 6, p. 11).
14. Dietary Guidelines Advisory Committee. 2015. Scientific Report of the 2015 Dietary Guidelines Advisory Committee: Advisory Report to the Secretary of Health and Human Services and the Secretary of Agriculture. Accessed at: <https://health.gov/dietaryguidelines/2015-scientific-report/PDFs/Scientific-Report-of-the-2015-Dietary-Guidelines-Advisory-Committee.pdf> (Part D, Chapter 6, p. 7).
15. Food and Drug Administration. At a Glance: Lowering Sodium in the Food Supply. Accessed at: <https://www.fda.gov/Food/IngredientsPackagingLabeling/FoodAdditivesIngredients/ucm253316.htm#summary>.
16. U.S. Food and Drug Administration. Nutrient content claims for the sodium content of foods. 21 CFR 101.61. Revised as of April 1, 2017. Accessed at: <https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?fr=101.61>.
17. Shea BJ, Grimshaw JM, Wells GA, Boers M, Andersson N, Hamel C, Porter AC, Tugwell P, Moher D, Bouter LM. Development of AMSTAR: a measurement tool to assess the methodological quality of systematic reviews. *BMC Med Res Methodol*. 2007 Feb 15; 7:10.
18. Shea BJ, Bouter LM, Peterson J, Boers M, Andersson N, Ortiz Z, Ramsay T, Bai A, Shukla VK, Grimshaw JM. External Validation of a Measurement Tool to Assess Systematic Reviews (AMSTAR). *PLoS ONE*. 2007; 2(12): e1350.
19. Shea BJ, Hamel C, Wells GA, Bouter LM, Kristjansson E, Grimshaw J, Henry DA, Boers M. AMSTAR is a reliable and valid measurement tool to assess the methodological quality of systematic reviews. *J Clin Epidemiol*. 2009 Oct; 62(10):1013-20.
20. National Alliance for Nutrition and Activity. NANA Model Beverage and Food Vending Machine Standards. Accessed at: <https://cspinet.org/resource/nana-model-beverage-and-food-vending-machine-standards>.
21. Partnership for a Healthier America. PHA's Healthier Food and Beverage Product Calculator. Accessed at: <https://www.abealthieramerica.org/articles/pha-s-healthier-food-and-beverage-product-calculator-381>.
22. Walmart. Great For You. Accessed at: <https://corporate.walmart.com/global-responsibility/hunger-nutrition/great-for-you>.

Appendix A: Better-For-You Standards and Healthy Eating Guidelines Evaluated (alphabetical order)

Access to Nutrition Standards Index: Global Index 2016

Developed as an independent benchmarking tool that measures companies' contributions to good nutrition against international norms and standards.

<https://www.accesstonutrition.org/sites/in16.atnindex.org/files/resources/atni-global-index-2016.pdf>

American Heart Association Diet and Lifestyle Recommendations

Developed by American College of Cardiology and American Heart Association as guidelines for lifestyle management to reduce cardiovascular risk.

http://www.heart.org/HEARTORG/HealthyLiving/HealthyEating/Nutrition/The-American-Heart-Associations-Diet-and-Lifestyle-Recommendations_UCM_305855_Article.jsp#.WzEGviOZO9Y

American Heart Association Healthy Workplace Food and Beverage Guidance

Developed as part of a broader toolkit encouraging healthier work environments.

http://www.heart.org/HEARTORG/HealthyLiving/WorkplaceHealth/EmployerResources/Healthy-Workplace-Food-and-Beverage-Toolkit_UCM_465195_Article.jsp

Center for Science in the Public Interest Healthy Meeting Guidelines

Developed as part of a broader toolkit encouraging healthier food choices at workplace meetings and conferences.

<https://cspinet.org/sites/default/files/attachment/Healthy-Meeting-Guidelines.pdf>

Children's Food and Beverage Advertising Initiative (CFBAI) Category-Specific Uniform Nutrition Criteria

Developed for companies participating in CFBAI to govern what foods they may advertise directly to children under age 12.

<https://www.bbb.org/us/storage/16/documents/cfbai/CFBAI-Category-Specific-Uniform-Nutrition-Criteria.pdf>

Choices Nutrition Criteria

Developed based on international dietary guidelines from the World Health Organization to be used as a benchmark for product reformulation, healthy product offerings and positive front-of-pack labeling.

<https://www.choicesprogramme.org/about/product-criteria>

Dietary Approaches to Stop Hypertension Eating Plan

Developed as a dietary and meal plan to prevent and control hypertension

<https://www.nhlbi.nih.gov/health-topics/dash-eating-plan>

Disney Nutrition Guideline Criteria

Developed to govern what foods and beverages may be associated with Walt Disney brands and characters or which may receive their Mickey Check icon.

<http://cdn.media.thewaltdisneycompany.com/cdnmedia/photos/corporatecitizenship/programs/NGexternal121412.pdf>

Food Service Guidelines for Federal Facilities

Developed through collaboration of nine federal departments and agencies to ensure healthier foods and beverages are available and encouraged, environmentally responsible practices are conducted and food safety practices are followed at federal facilities.

https://www.cdc.gov/obesity/downloads/guidelines_for_federal_concessions_and_vending_operations.pdf

Guide to Creating a Front of Pack (FoP) Nutrition Label for Pre-packed Products Sold through Retail Outlets

Developed by the United Kingdom's Department of Health to provide step-by-step support for businesses on developing a 'Front of Pack' (FoP) nutrition label.

<https://www.gov.uk/government/publications/front-of-pack-nutrition-labelling-guidance>

Guiding Stars

Developed to assist consumers in selecting foods containing more vitamins, minerals, dietary fiber, whole grains, and less fats, cholesterol, sugar and sodium.

<https://guidingstars.com>

Healthy Eating Research Minimum Stocking Levels and Marketing Strategies of Healthful Foods for Small Retail Food Stores

Developed to identify basic, minimum stocking levels for healthful foods and beverages in small retail food stores.

http://healthyeatingresearch.org/wp-content/uploads/2016/02/her_minimum_stocking_final.pdf

Interagency Working Group on Food Marketed to Children

Developed by the Federal Trade Commission (FTC), the Centers for Disease Control and Prevention (CDC), the Food and Drug Administration (FDA), and the United States Department of Agriculture (USDA), as an instrument to seek public comment on a preliminary proposal for voluntary principles to guide industry self-regulatory efforts to improve the nutritional profile of foods marketed to children. Standards remain as proposed. A final version was not published.
https://www.ftc.gov/sites/default/files/documents/public_events/food-marketed-children-forum-interagency-working-group-proposal/110428foodmarketproposedguide.pdf

National Academies of Science Front-of-Package Nutrition Rating Systems and Symbols: Promoting Healthier Choices

Developed to describe the characteristics of a model front-of-package (FOP) symbol system and an approach for evaluating food and beverage products for the amount of saturated and trans fats, sodium, and added sugars.
<http://www.nationalacademies.org/hmd/Reports/2011/Front-of-Package-Nutrition-Rating-Systems-and-Symbols-Promoting-Healthier-Choices.aspx>

National Alliance for Nutrition and Activity Model Beverage and Food Vending Machine Standards

Developed as model healthy standards for municipal, state, and federal government leased or operated vending machines or vending machines on public property.
<https://cspinet.org/resource/nana-model-beverage-and-food-vending-machine-standards>

National Park Service Healthy Food Choice Standards and Sustainable Food Choice Guidelines for Front Country Operations

Developed to increase healthy and sustainable food choices in National Park Service front country food service operations.
https://concessions.nps.gov/docs/healthy_parks_healthy_foods/nps_front_country_healthy_and_sustainable_food_choices_05.03.13.pdf

Partnership for a Healthier America Healthier Food and Beverage Product Calculator

Developed to assist retailers, manufacturers and distributors identify healthier packaged foods and beverages to stock, sell, market, or merchandise.
<https://www.ahealthieramerica.org/articles/pha-s-healthier-food-and-beverage-product-calculator-381>

RAND Performance Standards for Restaurants: Healthier Restaurant Meal Guidelines for Adults and Children

Developed to assist to restaurants and communities in increasing healthier food choices for away-from-home meals.
https://www.rand.org/content/dam/rand/pubs/conf_proceedings/CF300/CF313/RAND_CF313.pdf

USDA Nutrition Standards for CACFP Meals and Snacks

Developed through a regulatory process by the U.S. Department of Agriculture as the Federal requirement for all meals and snacks served to infants, children and adults and reimbursed through the Child and Adult Care Food Program.
<https://www.gpo.gov/fdsys/pkg/FR-2016-04-25/pdf/2016-09412.pdf>

USDA Nutrition Standards in the National School Lunch and School Breakfast Programs

Developed through a regulatory process by the U.S. Department of Agriculture as the Federal requirement for all meals reimbursed through the National School Lunch Program and School Breakfast Program.
<https://www.gpo.gov/fdsys/pkg/FR-2012-01-26/pdf/2012-1010.pdf>

USDA Smart Snacks Nutrition Standards

Developed through a regulatory process by the U.S. Department of Agriculture as the Federal requirement for all foods sold in schools, outside the National School Lunch Program and School Breakfast Program.
<https://healthymeals.fns.usda.gov/sites/default/files/uploads/USDSmartSnacks.pdf>

Walmart Great for You

Developed to help Walmart consumers identify healthy options within the private Great Value and Marketside brands.
<https://corporate.walmart.com/global-responsibility/hunger-nutrition/great-for-you>

YMCA's Healthy Eating and Physical Activity Standards for Early Learning and Afterschool Programs

Developed as food guidelines embedded in a broader effort to create environments that promote healthy eating and physical activity in YMCA early care and education settings and afterschool programming.
[http://s3.amazonaws.com/ymca-yenet-dev/files/pdf/Y's%20Healthy%20Eating%20and%20Physical%20Activity%20\(HEPA\)%20EL%20and%20AS%20Standards%201-pa....pdf#asset:16881](http://s3.amazonaws.com/ymca-yenet-dev/files/pdf/Y's%20Healthy%20Eating%20and%20Physical%20Activity%20(HEPA)%20EL%20and%20AS%20Standards%201-pa....pdf#asset:16881)

Appendix B. Assessing High Quality Nutrition Standards (AHQNS) Checklist

A “Better-For-You” standard supports a healthy eating pattern that includes all food groups and limits saturated fats and trans fats, added sugars and sodium. The following checklist was developed to assess better-for-you (BFY) food standards that promote healthier choices in the marketplace. The checklist evaluates key components, which should be included in product nutrition standards to ensure they are consistent with the Dietary Guidelines for Americans (DGA) and other evidence-based recommendations. Researchers, policymakers, advocates and other stakeholders may use this guide to evaluate existing BFY standards or to create model standards for future applications.

Many of the items in AHQNS are written to be self-explanatory. However, the underlying issues are often complex,

and subject to varying interpretation, particularly when judgments are made across a wide spectrum of nutrition standards. While AHQNS is designed to generate an overall ‘score,’ it should be noted that a high score may disguise critical weaknesses in specific areas of the standards.

To complete the checklist, review the bolded question and subsequent text for clarification. Additional footnotes are provided to answer key questions. If the standard does not address a particular topic, does not apply may be selected. If the standard does address a particular topic and meets the criteria outlined, 1 point is assigned under the Yes column. If the standard does not meet the criteria, a 0 is assigned in the No category.

1. Do the standards require products to contribute to a healthy eating pattern? The standards require all products to contain a minimum serving from one of the six food groups listed in the Dietary Guidelines for Americans (fruit, vegetables, grains, proteins, dairy, and oils). <i>Note: If the standards allow products to qualify based on nutrients alone (e.g. %DV) and not servings of food groups, select No.</i>	Yes	No	Does Not Apply
2. Are vegetables required? The standards require products to contain a minimum serving of specific food groups and vegetables are listed as an option. <i>Note: If a minimum contribution of vegetables is not mentioned or is only encouraged, but not required, select No.</i>	Yes	No	Does Not Apply
3. Are single-ingredient vegetables automatically allowed? The standards exempt or automatically allow vegetables prepared with no added solid fats, sugars, refined starches, and sodium.	Yes	No	Does Not Apply
4. Is there a maximum sodium level for vegetable servings? The standards require a sodium limit for vegetables.	Yes	No	Does Not Apply
5. Are fruits required? The standards require products to contain a minimum serving of specific food groups and fruits are listed as an option. <i>Note: If a minimum contribution of fruit is not mentioned or is only encouraged, but not required, select No.</i>	Yes	No	Does Not Apply
6. Is fruit juice limited to 100% juice with no added sugar? If fruit juice is allowed, it is required to be 100% juice with no added sugar. <i>Note: If no fruit juice is allowed at all, select Does Not Apply.</i>	Yes	No	Does Not Apply
7. Is fruit juice limited to age appropriate portion sizes? If fruit juice is allowed, it is limited to age appropriate portion sizes as defined by HER's Recommendations for Healthier Beverages ¹ (0-8 ounces for ages 11 and up; 0-6 ounces for ages 5-10; 0-4 ounces for ages 2-4). <i>Note: If no fruit juice is allowed at all, select Does Not Apply. If portion size is greater than 8 ounces, regardless of age, select No.</i>	Yes	No	Does Not Apply
8. Are single-ingredient fruits automatically allowed? The standards exempt or automatically allow fruit prepared with no added solid fats, sugars, refined starches, and sodium.	Yes	No	Does Not Apply

<p>9. Are whole grains required?</p> <p>The standards require products to contain a minimum serving of specific food groups and whole grains are listed as an option.</p> <p><i>Note: If a minimum contribution of grains is not mentioned or is only encouraged, but not required, select No.</i></p>	Yes	No	Does Not Apply
<p>10. Are whole grains defined as whole grain-rich?</p> <p>The standards contain one of the following whole grain-rich definitions:</p> <p>Whole grains must be first ingredient</p> <p>Products with at least 50 percent of the total weight as whole-grain ingredients</p> <p>Products must contain at least 8g whole grain per ounce-equivalent.</p> <p><i>Note: If the standards do not list one of the definitions above, select No. If the standards require 50 to 100% total weight as whole grain ingredients or more than 8g whole grain per ounce-equivalent, select Yes.</i></p>	Yes	No	Does Not Apply
<p>11. Are whole grains defined as 100% whole grain?</p> <p>The standards define whole grains as only containing 100% whole grain ingredients.</p>	Yes	No	Does Not Apply
<p>12. Is there a maximum sodium level for grain servings?</p> <p>The standards require a sodium limit for grains.</p>	Yes	No	Does Not Apply
<p>13. Is fat free or low-fat dairy required?</p> <p>The standards require products to contain a minimum serving of specific food groups and low-fat and fat free dairy are listed as an option. Fat-free or low-fat dairy includes, but is not limited to, milk, milk- and yogurt-based products, yogurt, cheese, and/or fortified soy-based dairy alternatives.</p> <p><i>Note: If a minimum contribution of dairy is not mentioned or is only encouraged, but not required, select No. If dairy foods are not specifically described as low-fat or fat-free, select No.</i></p>	Yes	No	Does Not Apply
<p>14. Is a sugar limit applied to dairy items?</p> <p>The standards require an added or total sugar limit for dairy items including milk, flavored milk, yogurt, dairy-based smoothies, drinkable yogurt, and fortified soy-based dairy alternatives.</p>	Yes	No	Does Not Apply
<p>15. Is a sodium limit applied to dairy items?</p> <p>The standards require a sodium limit for cheese and other dairy-based foods.</p>	Yes	No	Does Not Apply
<p>16. Are a variety of proteins discussed?</p> <p>The standards require a minimum contribution of specific food groups and proteins are listed as an option. Protein foods, including seafood, lean meats and poultry, eggs, legumes (beans and peas), and nuts, seeds, and/or soy products are included in list of required food components.</p> <p><i>Note: If a minimum contribution of protein is not mentioned or is only encouraged, but not required, select No. If none of lean proteins described above are included in the list of required food components, select No.</i></p>	Yes	No	Does Not Apply
<p>17. Are plant-based proteins discussed?</p> <p>The standards promote or require plant-based proteins and mention types of plant-based protein specifically.</p> <p><i>Note: If proteins from plant sources are listed specifically: legumes (beans and peas), and nuts, seeds, and/or soy products, select Yes.</i></p>	Yes	No	Does Not Apply
<p>18. Is there a maximum sodium level for protein servings?</p> <p>The standards require a sodium limit for proteins.</p>	Yes	No	Does Not Apply
<p>19. The standards prohibit foods of low nutrient density, fortified with added vitamins and minerals, or added fiber or protein?</p> <p>The standards stipulates that it is not appropriate to fortify snack foods such as cookies, candies, cakes, soft drinks, and chips, which are not nutrient-dense. Products are also required to contain only intrinsic, intact fiber and naturally occurring protein.</p> <p><i>Note: If the standards do not address fortification, select No. If the standards allow foods to qualify based only on daily value of non-naturally occurring nutrients, select No.</i></p>	Yes	No	Does Not Apply

<p>20. Are meat and poultry required to be lean? The standards ensure meats and poultry meet the USDA definition of lean, containing less than 4.5 g of saturated fats per labeled serving size (e.g., 95% lean ground beef, pork tenderloin, and skinless chicken or turkey breast).</p>	Yes	No	Does Not Apply
<p>21. Is a saturated fat limit required for all foods? The standard requires saturated fat to be less than 10% of calories or less than 1 g (per labeled serving size or 100g for meals and main dishes). <i>Note: If a saturated fat limit is set for some, but not all foods, select No. Exclude exempt plain fruits, vegetables, and foods rich in healthy fats (see Q20 below)</i></p>	Yes	No	Does Not Apply
<p>22. Are foods rich in healthy fats exempt from saturated fat standards? The standard exempts fish, nuts, nut-butters, seeds, and vegetables oils liquid at room temperature.</p>	Yes	No	Does Not Apply
<p>23. Is a trans fat gram limit required for all foods? The standards limit trans fat to <0.5g per labeled serving size (labeled as 0g, contains less than ½ gram). <i>Note: If a trans fat limit is set for some, but not all foods, select No.</i></p>	Yes	No	Does Not Apply
<p>24. Are trans fat ingredients limited for all foods? The standard requires that foods do not contain partially hydrogenated oils. <i>Note: The standard must specifically limit artificial partially hydrogenated oil ingredients for all foods.</i></p>	Yes	No	Does Not Apply
<p>25. Is a sugar limit required for all foods? The standards limit added sugar or total sugar in all foods. <i>Note: If a sugar limit is set for some, but not all foods, select No. Single-ingredient fruits and vegetables are exempt.</i></p>	Yes	No	Does Not Apply
<p>26. Is added sugar limited for all foods? The standards limit added sugar to 10% of calories or less for all foods. <i>Note: If an added sugar limit is set for some, but not all foods, select No.</i></p>	Yes	No	Does Not Apply
<p>27. Is a sodium limit required for all foods? The standards limit sodium in all foods. <i>Note: If a sodium limit is set for some, but not all foods, select No. Single-ingredient fruits and vegetables are exempt.</i></p>	Yes	No	Does Not Apply
<p>28. Is a healthier sodium limit set for all foods? The standards limit sodium in accordance with the FDA definition of “Low” to less than 140 mg per labeled serving size for individual foods and of “Healthy” to less than 600 mg per labeled serving size for meal and main dishes. <i>Note: If a healthier sodium limit is set for some, but not all, foods, select No. Single-ingredient fruits and vegetables are exempt.</i></p>	Yes	No	Does Not Apply
<p>29. Is a calorie limit set for all foods? The standards limit calories from all food categories. <i>Note: If a calorie limit is set for some, but not all foods, select No.</i></p>	Yes	No	Does Not Apply
Total For Each Category			

¹ Healthy Eating Research. Recommendations for Healthier Beverages. March 2013. Accessed at: <http://healthyeatingresearch.org/research/recommendations-for-healthier-beverages/>

About Healthy Eating Research

Healthy Eating Research (HER) is a national program of the Robert Wood Johnson Foundation. Technical assistance and direction are provided by Duke University under the direction of Mary Story, PhD, RD, program director, and Megan Lott, MPH, RDN, deputy director. HER supports research to identify, analyze, and evaluate environmental and policy strategies that can promote healthy eating among children and prevent childhood obesity. Special emphasis is given to research projects that benefit children and adolescents and their families, especially in lower-income and racial and ethnic populations at highest risk for obesity. For more information, visit www.healthyeatingresearch.org or follow HER on Twitter at [@HEResearch](https://twitter.com/HEResearch).

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