



Enhanced and Updated American Heart Association Heart-Check Front-of-Package Symbol: Efforts to Help Consumers Identify Healthier Food Choices



A VARIETY OF NUTRITION symbols and rating systems are on the front of food packages in the United States. Front-of-package (FOP) labeling systems are intended to help consumers make healthy food choices. However, many FOP systems have been criticized for causing confusion.¹ Consequently, in 2009 the US Congress directed the Centers for Disease Control and Prevention to address the issue. The Centers for Disease Control and Prevention contracted the Institute of Medicine (IOM) to examine

and provide recommendations regarding FOP nutrition labeling.² The IOM panel concluded that a shift is needed away from multiple systems that provide subsets of nutrition information already mandated on the Nutrition Facts label to one that provides clear guidance about the healthfulness of foods. The IOM described a preferred FOP symbol as one that is simple and requires no sophisticated nutrition knowledge to guide food purchase decisions, is interpretive with nutrition information provided as guidance rather than specific facts, offers nutrition guidance using an ordinal scaled or ranking system, and is supported by readily remembered names or symbols.²

In 1995 the American Heart Association (AHA) developed the Heart-Check Food Certification Program (H-C FCP) and accompanying H-C FOP symbol (see Figure 1) to help shoppers quickly and reliably identify heart-healthy foods that at a minimum met Food and Drug Administration (FDA) requirements to make a coronary heart disease health claim. The program was developed to fill a void because at the time there was no independent program (not associated with the federal government or the food industry) that identified heart-healthy foods. In an effort to incorporate evolving science, AHA invited volunteers from the cardiovascular nutrition field to provide consultation and expertise that would inform AHA staff as they carried out the following objectives: update the AHA H-C FCP and bring it into alignment with the latest scientific research related to diet and cardiovascular disease risk, determine whether Americans' consumption of foods whose nutrient profiles meet AHA H-C FCP requirements

was associated with better diet quality and reduced risk factors for cardiovascular disease, and gain consumer insights about the AHA H-C FCP to continually improve the program.

The definitive test of any FOP labeling system is whether it has an influence on better diet quality and improved public health. The AHA contracted with Nutrition Impact, LLC, to model several iterations of updated AHA H-C FCP criteria using the National Health and Nutrition Examination Survey 2007-2010 database. The consumption of AHA H-C FCP certifiable foods (ie, products whose nutrient profiles met AHA H-C FCP requirements) (see Figure 2) was positively associated with diet quality as measured by the 2005 Healthy Eating Index and fruit, vegetable, whole-grain, total sugar, fiber, potassium, calcium, and vitamin D intakes, and negatively associated with



Figure 1. American Heart Association Heart-Check Mark front-of-pack symbol.

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the percentage of energy intake from saturated fat, monounsaturated fat, added sugars, alcohol, cholesterol, and sodium.³ The highest quartile of daily energy intake from AHA H-C FCP certifiable foods was associated with lower risk of obesity, elevated waist circumference, and metabolic syndrome compared with the lowest intakes.³ Thus, the updated program criteria were validated and consumption of certifiable foods was found to positively influence food group and nutrient intakes and was associated with lower risk of cardiometabolic disease.³ The criteria updates discussed in this article were effective as of January 2014.

Our objective is to describe how the AHA H-C FCP was redesigned as well as present research on consumers' perceptions of the program. This research was determined to be exempt from institutional review board requirements because the human subjects involved cannot be identified either directly or indirectly.

UPDATING THE AHA H-C FCP TO BE CONSISTENT WITH THE LATEST SCIENCE

The primary goal of the project was to update and align the AHA H-C with current AHA scientific statements on diet and cardiovascular health.⁴⁻⁶ The focus was on the following key areas: ensuring that more food sources of monounsaturated (MUFA) and polyunsaturated (PUFA) fats were eligible for certification; setting food category-specific sodium limits; adding food category-specific requirements for dietary fiber, total sugars, and calories; and eliminating foods that list partially hydrogenated oils in the ingredient list.

To accomplish these goals, new certification categories were added, including products with higher levels of MUFA and PUFA (so-called healthy fats); most nuts (ie, almonds, hazelnuts, peanuts, pecans, pistachios, and walnuts) with sodium levels at 140 mg/serving or less; and fish containing ≥ 500 mg n-3 fatty acids per 3-oz serving (oily fish such as salmon).

To further improve the overall nutrition profile of certified products and to make it easier for consumers to follow a heart-healthy dietary pattern, category-based sodium limits and category-specific requirements for

dietary fiber, total sugars, and calories were implemented. In establishing these criteria, nutrients of public health concern identified in the 2010 Dietary Guidelines for Americans (ie, potassium, dietary fiber, calcium, and vitamin D) were taken into account.⁷ Care was taken not to be so stringent as to prevent important food sources of these key nutrients from being eligible for certification (eg, vegetables, fruits, whole grains, and milk and dairy products). The same rationale applied to fish and nuts. It was critical to ensure that the updated criteria promote consumption of foods that positively influence overall diet quality, promote nutrient adequacy, and achieve an eating pattern associated with beneficial health outcomes as validated through food modeling. Care was taken to strike a balance between products that are available in the marketplace and the food modeling research that demonstrated positive effects and diet quality and health.³

Sodium limits were established by food category and each category was evaluated independently. In addition to the nutrients of public health concern, the role of sodium in food processing and current sodium ranges for products in the marketplace were taken into account. Depending on these factors, one of four sodium limits was allowed for a particular food category: 140, 240, 360, or 480 mg sodium/serving (see [Figure 2](#) for food categories). This approach enables the consumer to construct a healthier dietary pattern by making food selections that reduce sodium intake over time using a stair-step approach. With current average sodium intake in the United States of about 3,400 mg/day,⁸ substantially higher than recommended,⁷ a reduction in dietary sodium over time is needed for most consumers to succeed in lowering their intake.⁹

Because added sugars are not currently disclosed on the Nutrition Facts label, requirements were added for food categories such as cereal, flavored milk, and yogurt, which have a wide range of added sugars content but are also important sources of the nutrients of public health concern specified above. By establishing total sugars, dietary fiber, and calorie requirements for these food categories, the AHA H-C FCP promotes the consumption of important nutrients while at the same time limiting excess calories

from added sugars. Examples of how these criteria are applied to various food groups are shown below:

Example 1: Cereals (Hot or Cold)*

The requirements for cereal include:

- ≤ 7 g Total sugars per serving if it is a good source of dietary fiber (ie, 10% to 19% Daily Value per Reference Amounts Customarily Consumed); or
- ≤ 9 g Total sugars per serving, if it is an excellent source of dietary fiber ($\geq 20\%$ Daily Value per Reference Amounts Customarily Consumed).

It should be noted that sugars from pieces of fruit do not count toward the total sugar allowance, but amounts and sources must be disclosed by the manufacturer.

Example 2: Milk and Yogurt

The requirements for milk and yogurt include:

- Milk and milk alternatives (nondairy beverages such as nut, rice, and soy "milks"): 130 kcal or less per 8 fl oz. This allows flavored milk with lower levels of added sugars and fat.
- Yogurt: 20 g or less total sugars per 6 oz serving. This allows yogurt with some added sugars.

Example 3: Canned Vegetables

The sodium criterion for most canned vegetables is 240 mg sodium per

**Daily Values and Reference Amounts Customarily Consumed are standard serving sizes established by the federal government for many different food categories based on the average amount of food usually eaten at one time, using national food consumption surveys. The intent of the Reference Amounts Customarily Consumed is to define uniform serving sizes to help consumers compare foods and the Reference Amounts Customarily Consumed is used as the basis for making nutrient content claims and health claims. Reference Amounts Customarily Consumed are not necessarily recommended serving sizes.*

American Heart Association Heart-Check Food Certification Program Nutrition Requirements

	Standard** Docket # 2006Q-0458	Standard "Extra Lean" (meat and seafood) 21 CFR 101.75	Main Dish and Meal Products 21 CFR 101.75	Whole Grain with required levels of whole grain & dietary fiber Docket # 03Q-0547	Nuts (whole or chopped) Docket # 02P-0505	Fish with required level of Omega-3 Fatty Acids Docket # 2003Q-0401
Total Fat	less than 6.5 g	less than 5 g also per 100 g*	3 g or less per 100 g of product* and 30% or less calories from fat	less than 6.5 g	no limit	16 g or less
Saturated Fat	1 g or less and 15% or less calories from saturated fat	less than 2 g also per 100 g*	1 g or less per 100 g of product* and less than 10% calories from saturated fat	1 g or less and 15% of less calories from saturated fat	4 g or less per 50 g only*	4 g or less
Trans Fat	less than 0.5 g also per label serving* Products containing partially hydrogenated oils are not eligible for certification	less than 0.5 g also per label serving* Products containing partially hydrogenated oils are not eligible for certification	less than 0.5 g also per label serving* Products containing partially hydrogenated oils are not eligible for certification	less than 0.5 g also per label serving* Products containing partially hydrogenated oils are not eligible for certification	less than 0.5 g also per label serving*	less than 0.5 g also per label serving*
Cholesterol	20 mg or less	less than 95 mg also per 100 g*	20 mg or less per 100 g of product*	20 mg or less	0 mg per label serving*	less than 95 mg also per 100 g*
Sodium	One of four sodium limits applies based on food category: up to 140 mg, 240 mg, or 360 mg per label serving*, or 480 mg per label serving and per RACC*. See Sodium Limits by Category at heartcheckmark.org for details.	One of four sodium limits applies based on food category: up to 140 mg, 240 mg, or 360 mg per label serving*, or 480 mg per label serving and per RACC*. See Sodium Limits by Category at heartcheckmark.org for details.	600 mg or less per label serving*	One of four sodium limits applies based on food category: up to 140 mg, 240 mg, or 360 mg per label serving*, or 480 mg per label serving and per RACC*. See Sodium Limits by Category at heartcheckmark.org for details.	140 mg or less per label serving*	One of four sodium limits applies based on food category: up to 140 mg, 240 mg, or 360 mg per label serving*, or 480 mg per label serving and per RACC*. See Sodium Limits by Category at heartcheckmark.org for details.
Beneficial Nutrients (naturally occurring or historically fortified)	10% or more Daily Value of 1 of 6 nutrients: vitamin A, vitamin C, iron, calcium, protein or dietary fiber	10% or more Daily Value of 1 of 6 nutrients: vitamin A, vitamin C, iron, calcium, protein or dietary fiber	10% or more Daily Value of 1 of 6 nutrients: vitamin A, vitamin C, iron, calcium, protein or dietary fiber per the entire main dish or meal*	10% or more Daily Value of 1 of 6 nutrients: vitamin A, vitamin C, iron, calcium, protein or dietary fiber	10% or more Daily Value of 1 of 6 nutrients: vitamin A, vitamin C, iron, calcium, protein or dietary fiber <i>(not applicable to walnuts)</i>	10% or more Daily Value of 1 of 6 nutrients: vitamin A, vitamin C, iron, calcium, protein or dietary fiber
Whole Grain Content	N/A	N/A	N/A	51% or more by weight/RACC	N/A	N/A
Minimum Dietary Fiber (from whole grain only)	N/A	N/A	N/A	1.7 g per RACC of 30 g 2.5 g per RACC of 45 g 2.8 g per RACC of 50 g 3.0 g per RACC of 55 g	N/A	N/A
Omega-3 Fatty Acids (EPA & DHA)	N/A	N/A	N/A	N/A	N/A	500 mg or more per 85 g (3 oz) cooked*
Other	N/A	N/A	N/A	N/A	Eligible nuts: almonds, hazelnuts, peanuts, pecans, pistachios, walnuts and some pine nuts Added Fats: less than 0.5 g per RACC Added Carbohydrates: less than 1 g per RACC Amount(s) and source(s) must be disclosed	Added Fats: less than 0.5 g per RACC Added Carbohydrates: less than 1 g per RACC Amount(s) and source(s) must be disclosed
Additional Food Category-Specific Requirements	Grain-Based Products Certifiable products include breads, biscuits, cereals (ready-to-eat & cooked), crackers, pancakes, French toast, waffles, muffins, sweet quick-type breads, and pastas • Dietary fiber: 10% or more Daily Value per RACC • Sugars (total): - 7 g or less per serving if good source of dietary fiber (10-19% Daily Value per RACC) - 9 g or less per serving if excellent source of dietary fiber (20% or more Daily Value per RACC) <i>Sugars from pieces of fruit do not count toward the sugars allowance but amount(s) and source(s) must be disclosed</i> <i>(continued on next page)</i>	N/A	N/A	Grain-Based Products Certifiable products include breads, biscuits, cereals (ready-to-eat & cooked), crackers, pancakes, French toast, waffles, muffins, sweet quick-type breads, and pastas • Dietary fiber: 10% or more Daily Value per RACC • Sugars (total): - 7 g or less per serving if good source of dietary fiber (10-19% Daily Value per RACC) - 9 g or less per serving if excellent source of dietary fiber (20% or more Daily Value per RACC) <i>Sugars from pieces of fruit do not count toward the sugars allowance but amount(s) and source(s) must be disclosed</i>	N/A	N/A

Figure 2. American Heart Association Heart-Check Food Certification Program nutrition requirements. The Heart-Check Program has six different categories of certification, and each category has a different set of nutrition requirements. All products must meet government regulatory requirements for making a coronary heart disease health claim. The specific health claim corresponding to each certification category is indicated by docket or Code of Federal Regulations (CFR) number. Most nutrient requirements are per Food and Drug Administration/US Department of Agriculture Reference Amount Customarily Consumed (RACC) or standardized serving size. Main Dish and Meal Products do not have RACC amounts. More information is available at www.heartcheckmark.org. EPA=eicosapentanoic acid. DHA=docosahexaenoic acid. N/A=not available. *Measurement amounts in addition to or instead of RACC. **This category only applies to Food and Drug Administration—regulated products. *(continued on next page)*

American Heart Association Heart-Check Food Certification Program Nutrition Requirements

	Standard** Docket # 2006Q-0458	Standard "Extra Lean" (meat and seafood) 21 CFR 101.75	Main Dish and Meal Products 21 CFR 101.75	Whole Grain with required levels of whole grain & dietary fiber Docket # 03Q-0547	Nuts (whole or chopped) Docket # 02P-0505	Fish with required level of Omega-3 Fatty Acids Docket # 2003Q-0401
Additional Food Category-Specific Requirements (continued)	<p>Yogurt</p> <ul style="list-style-type: none"> • 20 g or less sugars (total) per standard 6 oz serving <p>Milk & Milk Alternatives</p> <ul style="list-style-type: none"> • 130 or less calories per 8 fl oz <p>Fruit/Vegetable Juices</p> <ul style="list-style-type: none"> • 100% juice (or 100% juice plus water) with no added sugars/sweeteners (excludes non-nutritive sweeteners) • 120 or less calories per 8 fl oz • 10% Daily Value for 3 nutrients for which a Daily Value exists – at least one of these beneficial nutrients must satisfy the 10% Daily Value level requirement <p>Canned Fruits/Vegetables (including potatoes and sweet potatoes)</p> <ul style="list-style-type: none"> • No "Heavy Syrup" allowed <p>Frozen Fruit</p> <ul style="list-style-type: none"> • 100% fruit (no added sugars) 					
Category Examples Include	<ul style="list-style-type: none"> • Bakery products (breads, crackers) • Beans and legumes • Cereals and other grain products (pasta, rice) • Dairy (yogurt, milk, cheese) • Fruits • Juice • Mixed dishes (casseroles, spaghetti with sauce) • Potatoes • Soups (without meat or seafood) • Vegetables 	<ul style="list-style-type: none"> • Canned meat and seafood • Deli meats • Fresh and frozen meat • Soups (with meat/seafood) 	<ul style="list-style-type: none"> • Frozen and packaged meals and entrees (minimum 6 oz) 	<ul style="list-style-type: none"> • Bread • Cereal • Pasta • Tortillas 	<ul style="list-style-type: none"> • Almonds • Hazelnuts • Peanuts • Pecans • Pistachios • Walnuts 	<ul style="list-style-type: none"> • Mackerel • Salmon • Trout

Figure 2. (continued) American Heart Association Heart-Check Food Certification Program nutrition requirements. The Heart-Check Program has six different categories of certification, and each category has a different set of nutrition requirements. All products must meet government regulatory requirements for making a coronary heart disease health claim. The specific health claim corresponding to each certification category is indicated by docket or Code of Federal Regulations (CFR) number. Most nutrient requirements are per Food and Drug Administration/US Department of Agriculture Reference Amount Customarily Consumed (RACC) or standardized serving size. Main Dish and Meal Products do not have RACC amounts. More information is available at www.heartcheckmark.org. EPA=eicosapentanoic acid. DHA=docosahexaenoic acid. N/A=not available. *Measurement amounts in addition to or instead of RACC. **This category only applies to Food and Drug Administration–regulated products.

labeled serving size. The cutoff for canned tomato–based products is 360 mg per serving because canned tomatoes are frequently used in recipes rather than consumed on their own. Based on food modeling using National Health and Nutrition Examination Survey data,³ excessively stringent sodium cutoffs were avoided to prevent the unintended consequence of discouraging vegetable consumption; vegetables are foods that food and nutrition practitioners and health professionals encourage people to consume. Also, because canned vegetables are often less expensive than fresh vegetables, the goal was to not disadvantage

underserved groups by having a sodium cutoff that would exclude many canned vegetables.

Example 4: Canned Fish

The sodium criterion for canned fish (including seafood) is 360 mg sodium per labeled serving size. Again, the rationale was to eliminate barriers to consumption of fish sources of heart-healthy n-3 fatty acids by avoiding overly stringent sodium limits on canned fish and seafood. The sodium cutoffs were set at a level that would have a meaningful effect on sodium reduction while at the same time avoiding the unintended consequence

of overly limiting selections of canned fish for consumers.

THE H-C MARK BUNDLES NUTRITION CRITERIA

As demonstrated, the AHA H-C FCP evaluates foods for a combination of nutrition criteria rather than just considering any one factor. The H-C mark on a food package is designed to be easy to use in a real-life setting and represents a bundling of criteria based on the food category, usually including total fat, saturated fat, trans fat, cholesterol, sodium, sugars, and calories as well as beneficial nutrients. This helps eliminate some of the

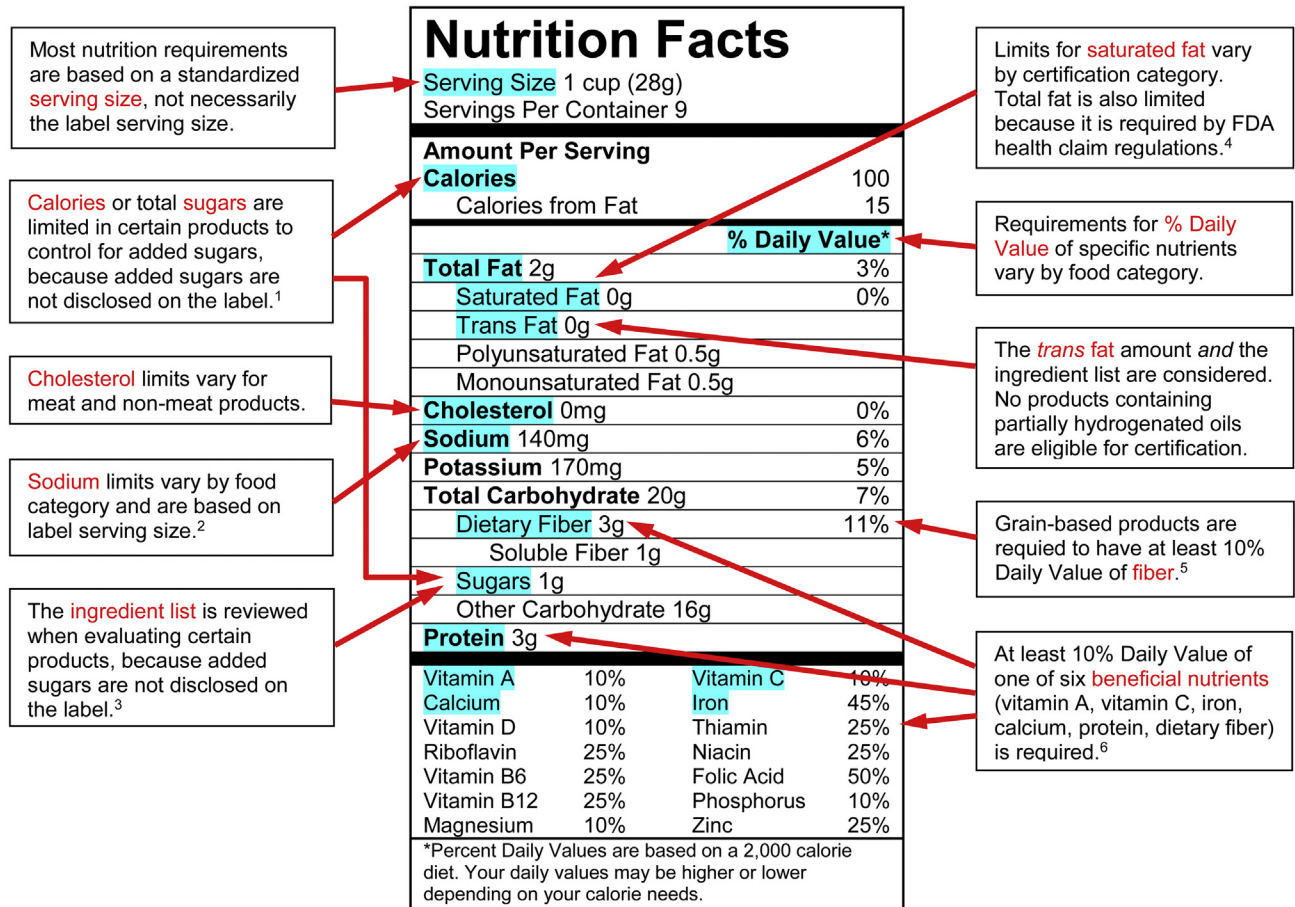


Figure 3. How the Heart-Check mark integrates Nutrition Facts. All callouts refer to the American Heart Association’s Heart-Check Food Certification Program nutrition requirements. 1=These products include milk and milk alternatives (eg, soy or almond), fruit and vegetable juices, yogurts, and cereals. 2=One of four sodium limits applies based on food category: up to 140 mg, 240 mg, or 360 mg per label serving, or 480 mg per label serving and standardized serving size. Limit is 600 mg/serving for meals and main dishes. 3=Added sugars/sweeteners are not allowed for certain products such as juice and frozen fruit. 4=During 2011 the Heart-Check program expanded to include nuts, fish high in n-3 fatty acids, and foods with higher levels of polyunsaturated and monounsaturated fats, based on American Heart Association science indicating that it is important to consume “better fats” (ie, polyunsaturated, monounsaturated, and n-3) and limit “bad fats” (ie, saturated and *trans* fat). 5=Grain-based products with at least 10% Daily Value of fiber are allowed up to 7 g added sugars per serving. Products with at least 20% DV of fiber are allowed up to 9g added sugars per serving. 6=Walnuts are exempt from this requirement. Fruit and vegetable juices are required to have at least 10% Daily Value for three beneficial nutrients.

guesswork in comparing and interpreting food labels (see Figure 3). Note that the AHA H-C FCP’s emphasis is on limiting saturated and *trans* fats; total fat must be considered due to current FDA health claim regulations. Figure 2 lists the complete updated AHA H-C FCP nutrition requirements. The nutrition requirements as well as a list of certified products are available to consumers at www.heartcheckmark.org.

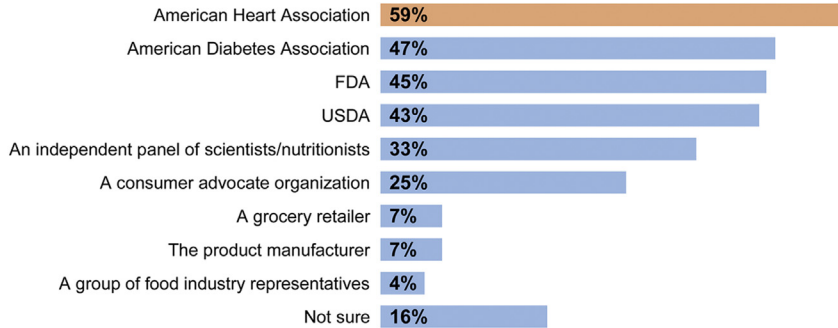
CONSUMERS’ OPINIONS ABOUT THE AHA H-C FCP

During June 2012, a sample of primary grocery shoppers (n=1,008) whose ethnic distribution was representative of the US population and who reported being “somewhat concerned” or “very concerned” with the nutritional content of food was surveyed online to assess their trust in and perception of AHA relative to other organizations to decide

whether a product may display health symbols, messages, or statements on food packaging. The results indicated that out of 10 potential organizations included in the survey, the AHA was ranked most trustworthy with respect to identifying heart healthy foods¹⁰ (see Figure 4).

During December 2012, AHA commissioned an online survey of primary shoppers (n=503) to further assess

Percent of respondents (n=1,008) who say they trust the organization/entity to decide if a product may display health symbols, messages or statements on food packaging ^{a,b,c}

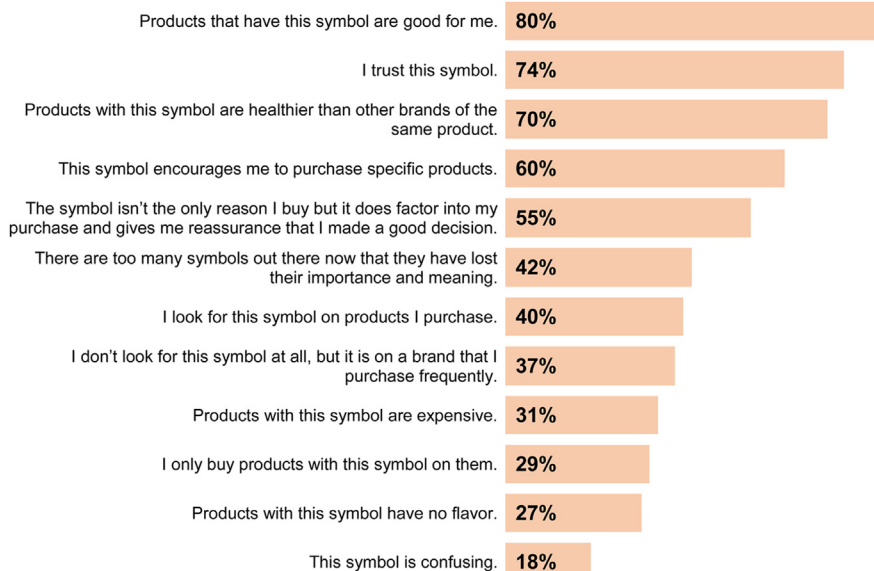


Percent of respondents (n=2,887) who agree with statement ^{d,e,f}

The Heart-Check mark...



Percent of respondents (n=503) who agree with statement ^{g,h,i}



shoppers' perceptions of the AHA H-C FCP. When asked to agree or disagree with specific statements about the H-C mark, among several other responses, 74% said they trust the mark and 80% said that products with the mark "are good for me" (see Figure 4).

During January 2013, the AHA commissioned an online virtual shopping study of primary grocery shoppers to determine the impact of the H-C mark on their product selection behavior and subconscious perceptions. Participants (n=2,887) were asked to act as if they were shopping in a virtual store by selecting products from various grocery store shelf scenarios. The scenarios included one brand within a category with the H-C symbol, two brands with the H-C symbol, and one brand with the H-C mark supported by shelf signage. After shopping, the participants were asked a series of diagnostic questions about their experience and product brands on the shelf. Lastly, respondents directly discussed their perceptions of the H-C mark. A key finding was that the H-C mark reinforced that the product is heart-healthy. When the H-C mark was supported with advertising, there was a significant increase in the selection of products with the mark, especially among African Americans and Hispanics, although the mark on product packaging alone had limited influence on initial product selection behavior. Notably, there was no drop in perceptions of products carrying the mark, even for the attribute "great tasting" (see Figure 4).

DISCUSSION AND CONCLUSION

The AHA H-C FCP criteria have evolved over time incorporating the most current science-based recommendations for diet and cardiovascular health. In summary, the program was updated to encourage intakes of MUFA and PUFA, certain nuts, and fish high in n-3 fatty acids; implement categorical sodium limits; add dietary fiber, total sugars, and calories requirements for certain food categories; and exclude foods containing partially hydrogenated oils. Furthermore, the H-C FOP system was validated and shown to be associated with improved diet quality and reduced cardiovascular disease risk factors.³ Notably, the H-C mark is trusted and perceived as useful by consumers to identify foods consistent with a heart-healthy dietary pattern.

There were limitations to the consumer research. Although the ethnic distribution of the consumer survey participants was reflective of the US population, the participants were self-selected as stating they were "somewhat concerned" or "very concerned" with the nutritional content of food and thus the samples are not representative of the entire US population. In addition, shoppers may not react in the same way to a real-life shopping experience as they did with the virtual shopping experience.

Until recently, there has been little progress toward establishing either a voluntary or mandatory standardized FOP labeling system in the United States. During 2013, the United Kingdom launched a voluntary traffic light FOP system with a combination of color

coding and nutrition information to show how much total and saturated fat, salt, sugar, and calories are in a product and whether (with the exception of calories) the amounts are high (red light), medium (yellow light), or low (green light).¹¹ Also in 2013, two US-based food industry groups, the Grocery Manufacturers Association and the Food Marketing Institute, representing almost 80% of products in retail, introduced the voluntary Facts Up Front FOP label.¹² The United Kingdom color-coded traffic light system helps consumers determine the healthfulness of a product at a glance. However, the Facts Up Front label is not interpretive because it highlights data from the Nutrition Facts label and only provides information about calories and a few nutrients in a food and not its overall healthfulness.

In early 2014, the FDA issued proposed rules to update the Nutrition Facts label.¹³ This will lead to the first major overhaul of the label since it was introduced in 1993, with the only change being the inclusion of *trans* fats in 2006.¹³ The FDA is currently considering public comments to the proposed changes. An update of the Nutrition Facts label is long overdue; however, the proposed revised label will not consider the overall nutritional quality and healthfulness of a food product. David Kessler, former commissioner of the FDA, recently called for an FOP label consumers can trust to help them make healthy choices.¹⁴ He laments the stalled efforts to develop mandatory FOP labeling. In the meantime, the updated and validated AHA Heart-Check FCP is filling a critical void in the marketplace.

Figure 4. Consumer trust and perceptions of the American Heart Association Heart-Check mark. ^aOnline survey of a nationally representative sample of primary and joint household grocery shoppers aged 25 to 54 years who reported being "somewhat concerned" or "very concerned" about the nutritional content of food. ^bDemographics of respondents: 71% white, 13% African American, 13% Hispanic, 51% income <\$50,000/year, 49% income ≥\$50,000/year. ^cSource: IPSOS, Understanding the Awareness of the AHA Heart-Check Mark, June 2012. ^dOnline survey of a nationally representative sample of primary household grocery shoppers aged 25 to 64 years. ^eDemographic characteristics of respondents: 31% men, 69% women; 24% aged between 25 and 34 years, 32% aged between 35 and 44 years, 29% aged between 45 and 54 years, and 16% aged between 55 and 64 years; 18% African American/black, 2% Asian American, 16% Hispanic, 64% white; and 53% income <\$50,000/year, 47% income ≥\$50,000/year. ^fSource: Decision Insight, AHA Heart-Check Mark ShopperIQ-Packaging Study, June 2013. ^gOnline survey of primary household grocery shoppers aged 25 to 55 years. ^hDemographic characteristics of respondents: 64% women, 36% men; 80% white, 20% other; 46% aged 45 to 55 years, 23% aged 35 to 44 years, 31% aged 25 to 34 years. ⁱSource: Acosta Marketing Group, AHA Shopper Survey, December 2012.

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DISCLOSURES

STATEMENT OF POTENTIAL CONFLICT OF INTEREST

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