

Claiming Health:



Front-of-Package
Labeling of
Children's Food

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BY PREVENTION INSTITUTE

PRINCIPAL AUTHORS:
Juliet Sims, MPH, RD
Leslie Mikkelsen, MPH, RD
Phebe Gibson, BA
Emily Warming, BA

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S U M M A R Y

Since the 1995 introduction of the American Heart Association's heart-healthy symbol, front-of-package labels — symbols that denote healthier products — have become increasingly common and are now a widely used food marketing tool. Some food and beverage manufacturers have promoted front-of-package labels as an innovative approach to healthier choices, but serious concerns exist over the potential for these symbols to confuse or mislead consumers, and encourage the purchase of unhealthful items. To investigate these concerns, Prevention Institute examined whether the front-of-package labels on grocery store products marketed to children did promote foods that were healthful. After reviewing fifty-eight children's food products containing front-of package labels, we found that 84% were unhealthy, as they did not meet one or more nutrient criteria.

BACKGROUND

Illness and chronic disease related to unhealthy eating and inactivity account for nearly 17% of our health care costs — \$168 billion in medical costs alone.¹ Dietary intake data indicate that both younger children and adolescents consume excessive dietary fat and sugar; a recent study found that nearly 40% of total calories consumed by 2- to 18-year-olds comes from empty calories — unhealthy fats and added sugars.² At the same time, healthful foods such as fruits, vegetables, and whole grains are under-consumed. Only 21% of children and adolescents age 6–19 years eat the recommended five or more servings of fruits and vegetables each day.³ A mere 12% of grains consumed by children and adolescents are whole.⁴

Accurate, simple, and scientifically valid nutrition and health information on food labels is a critical public health strategy to help improve shoppers' food choices and dietary quality, and reduce their risk of diet-related diseases. Yet food labeling trends over the past several decades have been characterized by an emergence of front-of-package symbols that may not provide the full picture of their products' true nutritional value.

Since the 1995 introduction of the American Heart Association's heart-healthy logo, symbols that denote healthier products have become increasingly common and are now a widely used food marketing tool.⁵ These symbols and the nutrition rating systems that underlie them have come to be known as front-of-package (FOP) labels, even though the actual symbol may be found anywhere on the food package. They summarize key nutritional aspects or characteristics of food products and are intended to be a tool to help shoppers choose healthier items from grocery store shelves.

Numerous food manufacturers, including PepsiCo, General Mills, Kellogg, Unilever, ConAgra, Mars, and Kraft have developed and begun to use their own FOP labels. Each manufacturer's label system uses its own criteria.

Food and beverage manufacturers have promoted FOP labels as an innovative approach to healthier choices, claiming they will “expand access to nutrition information for all Americans and give shoppers a powerful tool to assist them in selecting nutritious products.”⁶ Numerous health and nutrition experts, however, have voiced doubts. As FOP labels have proliferated, concerns

have been raised over the potential for FOP symbols to confuse or mislead consumers, and encourage the purchase of highly processed items. In 2009 FDA and the USDA's Food Safety and Inspection Service stated that the agencies “would be concerned if FOP labeling systems used criteria that were not stringent enough to protect consumers against misleading claims; were inconsistent with the *Dietary Guidelines for Americans*; or had the effect of encouraging consumers to choose highly processed foods and refined grains instead of fruits, vegetables, and whole grains.”⁷



Study products

METHODS

We used the Institute of Medicine's (IOM) FOP label definition to identify products with front-of-package labels. The IOM delineates three categories of FOP labels: *nutrient-specific systems*, *summary indicator systems*, and *food group information systems* (see Front-of-Package Labeling Systems box).⁸ Given the large quantity of grocery store products with FOP labels, we needed to narrow our search. To accomplish this, we began with the Children's Food and Beverage Advertising Initiative's (CFBAI) product list. This list contains products that manufacturers have determined meet certain self-developed nutrition criteria. Manufacturers agree to limit their advertising to children under 12 to products on the list. After visiting local grocery stores and reviewing the packaging of products from the CFBAI list, we found that 58 contained FOP labels.

These 58 products were the focus of our study (Table 1).

Table 1 Study Products	
<p>Prepared Foods & Meals</p> <ul style="list-style-type: none"> Campbell's "Cars" Shaped Pasta Campbell's Chicken & Stars Campbell's Chicken Alphabet Campbell's Condensed Soup – Princess Shaped Pasta with Chicken Campbell's Condensed Soup – Dora the Explorer Shaped Pasta with Chicken Campbell's Double Noodle Campbell's Tomato Campbell's SpaghettiOs plus Calcium Campbell's SpaghettiOs – Original Campbell's SpaghettiOs – Princess Shapes Chef Boyardee ABC's & 123's Chef Boyardee Big Beef Ravioli Chef Boyardee Forkables – Sports Chef Boyardee Forkables – Sea Life Chef Boyardee Mini Beef Ravioli & Meatballs* Chef Boyardee Mini O's Kid Cuisine All-Star Chicken Breast Nuggets Kid Cuisine Bug Safari Chicken Breast Nuggets Kid Cuisine Campfire Hotdog Kid Cuisine Karate Chop Chicken Sandwich Kid Cuisine Magical Cheese Stuffed Crust Pizza Kid Cuisine Pop Star Popcorn Chicken Skippy Creamy Peanut Butter Skippy Creamy Peanut Butter – Roasted Honey Nut Skippy Super Chunk Peanut Butter 	<p>Snacks (cont.)</p> <ul style="list-style-type: none"> Fruit Roll-Ups – Strawberry Fruit Roll-Ups Stickerz – Berry Cool Punch Fruit Shapes – Dora the Explorer Dannon Light & Fit Nonfat Yogurt – Vanilla Quaker Chewy Granola Bars, 90 Calories – Chocolate Chunk Quaker Chewy Granola Bars, 25% Less Sugar – Chocolate Chip <hr/> <p>Cereals</p> <ul style="list-style-type: none"> Apple Jacks Chocolate Cheerios Cinnamon Toast Crunch Cocoa Puffs Cookie Crisp Cookie Crisp – Sprinkles Corn Pops Froot Loops Frosted Cheerios Frosted Flakes Honey Nut Cheerios Lucky Charms Reese's Puffs Rice Krispies Trix <hr/> <p>Beverages</p> <ul style="list-style-type: none"> Capri Sun 100% Fruit Juice – Fruit Punch Capri Sun Juice Drinks – Strawberry Capri Sun Roarin' Waters – Tropical Fruit Capri Sun Sunrise Juice Drinks – Berry Tangerine Morning Kool-Aid Fun Fizz Drink Drops – Gigglin' Grape Nesquik Calcium-Fortified Lowfat Milk – Chocolate Nesquik Chocolate Powder – No Sugar Added Nesquik Chocolate Powder – 25% Less Sugar
<p>Snacks</p> <ul style="list-style-type: none"> Danimals Drinkable Smoothies – Strawberry Explosion Danimals Crush Cup – Strawberry Banana Fruit by the Foot – Berry Tie-Dye Fruit Gushers – Watermelon Blast 	

*This product is not included in the Children's Food and Beverage Advertising Initiative product list.

Front-of-Package Labeling Systems

Nutrient-Specific Systems



display on the front of the food package the amount per serving of select nutrients from the Nutrition Facts panel or use symbols based on claim criteria. A declaration of calories per serving may also be provided on the front of the food package.

Summary Indicator Systems



use a single symbol, icon, or score to provide summary information about the nutrient content of a product. No specific nutrient content information is given in these systems. The system may be based on nutrient thresholds or algorithms. Systems often use different criteria based on food categories (e.g., type of food or food product).



Food Group Information Systems



use symbols that are awarded to a food product based on the presence of a food group or food ingredient. Some symbols indicate the presence of a serving (or partial serving) of a particular food group, while other symbols indicate the presence of ingredients considered to be important dietary components such as whole grains.



Adapted from the Institute of Medicine Report *Examination of front-of-package nutrition rating systems and symbols: Phase 1 report*.

Nutrient Criteria

For the purposes of this study, we defined foods as unhealthful if they met one or more of the following criteria (Table 2):

High Fat	High Saturated Fat	High Sugar	High Sodium	Low Fiber
>35% calories from fat*	>10% calories from saturated fat	>25% calories from total sugars**	<u>Non-Meal Items:</u> >480mg per serving	<1.25g fiber per serving***
* Nuts, nut butters, and seeds (with no added fat) are exempt from this criteria		** Whole fruit, 100% fruit juice, and plain milk (or milk alternatives such as soy or rice milk) are exempt from this criteria	<u>Meal Items:</u> >600mg per serving	*** 100% fruit juice and plain milk (or milk alternatives such as soy or rice milk) are exempt from this criteria

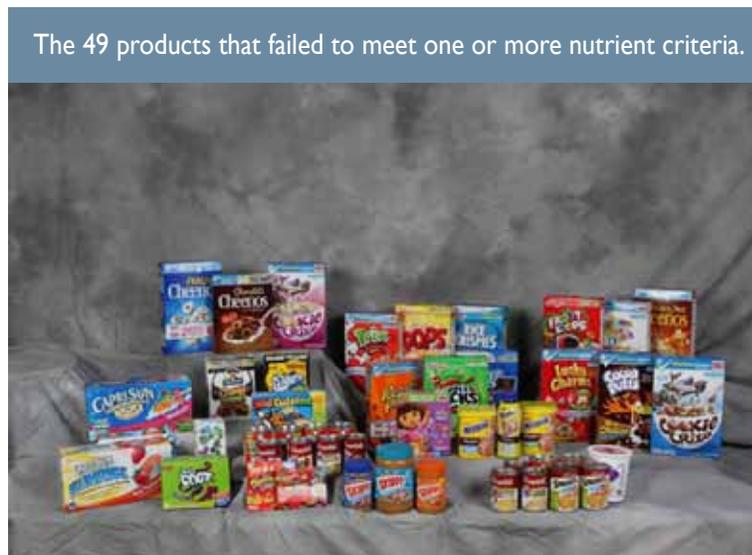
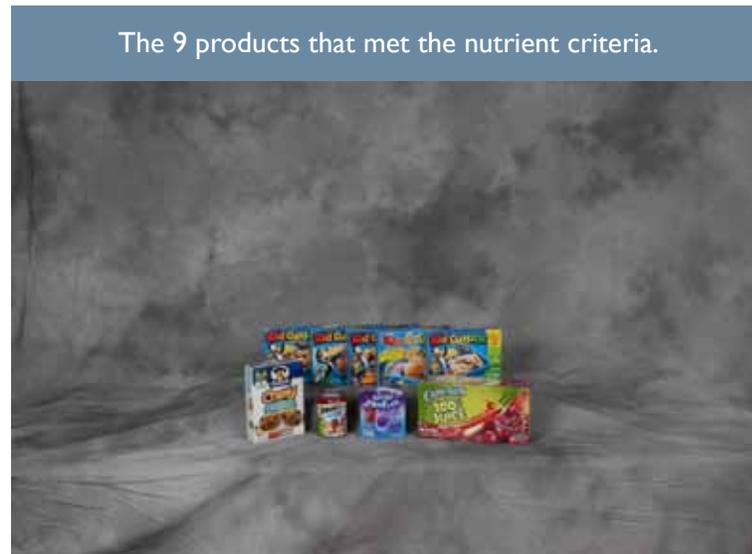
The criteria above are modeled on those used in a 2007 *Pediatrics* study that reviewed the nutritional content of highly advertised children's foods, and derived from the dietary references intakes report from the National Academy of Sciences and the 2005 U.S. Dietary Guidelines for Americans.^{9,10,11} We used the nutrition

facts panel to calculate the percent of calories from total sugars, fat, and saturated fat, as well as per-serving levels of sodium and fiber. The ingredients list was reviewed to determine the presence of caloric sweeteners (added sugars).

Whole-Food Ingredients Analysis

In addition to our nutrient criteria, we analyzed our study products to see if they contained any of the following whole food ingredients: fruits, vegetables, whole grains, low-fat dairy, nuts, and seeds. We chose these whole food ingredients because they are under-consumed in the general population and have been identified by the U.S. Dietary Guidelines as foods that should be encouraged.¹² Because manufacturers

consider the actual amount of each ingredient to be confidential (proprietary) information, we were not able to report on the quantity of the whole food ingredients. Therefore, we categorized an item as containing a whole food if it was listed among the first three ingredients (ingredients are listed on packages in descending order of predominance by weight).



ADDITIONAL KEY FINDINGS INCLUDE:

- Over half (57%) of the study products were high sugar, and 53% were low in fiber.
- Cereals were not only high in sugar (93%), but over half (60%) were low in fiber.
- Over one-third (36%) of prepared foods and meals were high in sodium, nearly one-quarter (24%) were high in saturated fat, and nearly one-third (28%) were low in fiber.
- Of the snack foods we studied, 90% were high in sugar, and 90% were low in fiber.

RESULTS

The data show that 84% of study products were unhealthy and did not meet one or more nutrient criteria (Table 3).



Table 3 | Nutritional Content of Children’s Products Containing Front-of-Package Labeling

Product Category	No. of Products	High Sugar	High Fat	High Saturated Fat	High Sodium	Low Fiber	Products which failed to meet 1 or more nutrient criteria*
Cereal	15	93%	-	-	-	60%	100%
Prepared Foods & Meals	25	16%	20%	24%	36%	28%	76%
Snack	10	90%	-	-	-	90%	90%
Beverage	8	75%	-	13%	-	75%	75%
Total for All Categories	58	57%	9%	12%	16%	53%	84%

* Percentage of products which failed to meet one or more of the nutrient criteria for total sugars, total fat, saturated fat, sodium & fiber:

Among all of the study products, 95% contained added sugar (Table 4). We found a variety of caloric sweeteners including sugar, corn syrup, high fructose corn syrup, dextrose, fructose, glucose, brown sugar, brown sugar syrup, invert sugar, honey, sugar cane syrup, molasses, and fruit juice concentrate.

Table 4 | Caloric Sweeteners in Children’s Products Containing Front-of-Package Labeling

Product Category	No. of Products	Caloric Sweetener Present
Beverage	8	75%
Cereal	15	100%
Prepared Foods & Meals	25	96%
Snack	10	100%
Total for All Categories	58	95%

Table 5 | Whole Food Ingredients in Children’s Products Containing Front-of-Package Labeling

Product Category	No. of Products	Fruit	Vegetable	Whole Grains	Dairy	Seeds/ Nuts	Products containing at least 1 whole food ingredient
Beverage	8	13%	-	-	13%	-	25%
Cereal	15	-	-	80%	-	7%	80%
Prepared Foods & Meals	25	4%	84%	44%	8%	12%	96%
Snack	10	50%	-	20%	30%	-	100%
Total for All Categories	58	12%	36%	43%	10%	7%	83%

Table 5 displays the whole food ingredients content of the study products broken down by food category and by the type of whole food ingredient. Among all of the products in the study, 17% contained no whole food ingredients. Among those that did, 47% of whole foods came from only 3 ingredients – whole wheat, whole grain corn, and tomatoes. Fewer than half (47%) of our

study products contained fruits and/or vegetables, and we found little variety among the fruits and vegetables that were found. Fifty percent came from only 2 ingredients – tomatoes and corn. Peas, which appeared in only one product, was the only green vegetable found.

Example products that failed to meet nutrient criteria.



Nutritional Analysis Revealed:
High sodium product, with 600 mg per 170-calorie serving.



Nutritional Analysis Revealed:
High sugar product, with only 10% fruit juice.



Nutritional Analysis Revealed:
High sugar product, with 48% of calories from sugar.



Nutritional Analysis Revealed:
High saturated fat and high sodium product, with 11% of calories from saturated fat and with 750mg of sodium per 250-calorie serving.



Nutritional Analysis Revealed:
High sugar product, with 37% of calories from sugar.

Artificial Food Dyes Found in Our Study Products

A common additive in processed foods, food dye is often used to simulate the presence of fruits and vegetables by mimicking their coloring.¹³ They also serve as a useful marketing tool: By making foods brightly colored, food manufacturers heighten their appeal to children. Derived from petroleum, artificial colorings have been linked to a number of adverse health outcomes, including hyperactivity in children and allergic reactions.^{14, 15, 16} Some animal studies have shown a relationship between dyes and certain cancers.^{17, 18, 19, 20, 21}

We investigated the presence of food dyes in our study products, and found that 21% contained artificial coloring. Five types of food dyes were present in our products: Blue #1, Blue #2, Red #40, Yellow #5, and Yellow #6. Given these additives' potentially harmful health impacts, while offering no benefits whatsoever, a precautionary approach would be to eliminate them from food products – especially products marketed to parents and children as healthier options.

FOOD DYES BY CATEGORY

Product Category	Artificial Color Present
Beverage	13%
Cereal	40%
Prepared Foods & Meals	-
Snack	50%
Total for All Categories	21%



RECOMMENDATIONS & CONCLUSION

Our findings call into question the nutritional value of products containing manufacturer-developed front-of-package labels. We found that the majority (84%) of these items did not meet one or more nutrient criteria for total sugars, fat, saturated fat, sodium, or fiber. 95% of our study products contained added sugar; 17% were absent any whole food ingredients. Our study indicates that manufacturer-developed FOP labels may do little to aid families in making informed, healthy purchasing decisions.

*Numerous health, medical, and consumer organizations in the United States have called for a uniform front-of-package label that helps consumers' select healthier food and avoid misleading or confusing labeling.²² Our findings support this call. Several countries have implemented front-of-package labeling systems,

including Sweden, Canada, and the Netherlands.²³ In the United States, the FDA should develop and require uniform criteria for front-of-package labeling using a nutrient specific system. This approach will level the playing field, allowing consumers to compare products and choose healthier items. Key nutrition information, including calories, saturated fat (and trans fat), added sugar, and sodium should be listed in easy-to-read type, on the front of packaging. Nutrients associated with health, including vitamins A, C, D, calcium, and fiber, should not be included since they have the potential to mislead shoppers into believing that foods with a poor overall nutritional profile are healthful. The development of such federal criteria will help support informed, healthier choices without undermining consumption of health-promoting whole and minimally processed foods, such as fruits, vegetables, and whole grains.

*This is Prevention Institute's second study that examines food packaging. Our 2007 study, *Where's the Fruit?* found that despite clear references to fruit on the packaging, nearly two-thirds of the most heavily advertised children's foods contained little to no actual fruit.

ENDNOTES

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ACKNOWLEDGEMENTS

The authors would like to thank the following Strategic Alliance Steering Committee members who provided valuable input and advice: Peggy Agron, Sarah Samuels, and Laurie True; and study reviewers: Jennifer Harris, Marion Nestle, Mary Story, and Margo Wootan. We also thank Lisa Powell for assistance with methods, and Veronica Labarca for help with data analysis. The content is the final responsibility of the authors.