
The Impact of Industry Self-Regulation on the Nutritional Quality of Foods Advertised on Television to Children

Commissioned by:
Children Now

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Strong scientific evidence shows that the marketing of unhealthy foods to children is a significant risk factor contributing to childhood obesity. In 2006, amidst growing public concern about this issue, the food and beverage industry responded with the self-regulatory Children's Food and Beverage Advertising Initiative. This initiative aims to significantly improve the nutritional quality of food and beverage products advertised to children.

Children Now commissioned this study to analyze the effectiveness of the Children's Food and Beverage Advertising Initiative.

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Executive Summary

Background

For the first time in modern history, the current generation of children may face a life expectancy that is shorter than that of their parents. This is due to the childhood obesity epidemic. Among the many health complications associated with childhood obesity are the earlier onset and growing rates of type 2 diabetes, high blood pressure and heart disease. There is a strong consensus that aggressive actions are urgently needed to better defend the nation's children from this growing crisis.

Numerous factors have been shown to contribute to childhood obesity, including reduced physical activity, the wider availability of nutritionally poor convenience foods, fewer family meals and advertising that promotes unhealthy foods. This study addresses food advertising to children, a factor of particular interest because it impacts virtually every child in the nation. Children are exposed to tens of thousands of commercials each year on television alone, including ads for fast food, sugared cereals and sugared beverages. Most of these foods are high in added sugar, salt and fat, and they are unhealthy when consumed on a regular basis.

In 2004, Congress commissioned the Institute of Medicine (IOM) of the National Academies to evaluate the role of food marketing as a contributing factor to childhood obesity. The IOM report, released in 2006, reviewed all existing scientific studies and determined that food and beverage advertising targeted at children influences their product preferences, requests and diet. It concluded that “food and beverage marketing practices geared to children and youth are out of balance with healthful diets, and contribute to an environment that puts their health at risk” (Institute of Medicine, 2006, p. 10).

Given the severity of the childhood obesity epidemic, the IOM recommended that the food and beverage industry shift its marketing practices to children away from products high in added sugar, salt and fat, and toward healthy products that children can safely consume as part of their everyday diet. To underscore the importance of this goal, the IOM specified that if the industry proved unable to achieve such reform voluntarily, Congress should intervene with legislation.

The IOM's conclusions confirmed the role of food and beverage marketing practices in the childhood obesity crisis, subsequently increasing attention to the issue among public health officials and children's advocates. In response to this growing pressure for change, the food and beverage industry responded with a self-regulatory program aimed at reducing unhealthy food advertising to children. This program is known as the Children's Food and Beverage Advertising Initiative.

The Children's Food and Beverage Advertising Initiative

In 2006, in partnership with the Council of Better Business Bureaus, a coalition of major food companies announced that it would significantly improve the nutritional quality of foods advertised to children. The publicly stated goal of this voluntary industry effort, called the Children's Food and Beverage Advertising Initiative, is to “change the landscape of child-directed advertising” by encouraging healthier dietary choices and healthy lifestyles in all advertising to children (Peeler, Kolish, & Enright, 2009, p.1).

The initiative introduced the term “better-for-you” to identify the products that participating companies had self-selected as the healthier food and beverage products they would continue to advertise to children. The initiative, however, lacked uniform criteria specifying the minimum nutritional standards for the “better-for-you” designation. Rather, each of the participating companies issued its own detailed pledge that defined “better-for-you” in its own way, resulting in substantial variability in the nutritional criteria used from one company to the next.

At the time this study was conducted, 15 companies were participating in the initiative (please see page 11 for company list), in which they publicly pledged to dramatically improve the nutritional profile of their food marketing to children. One additional company (Post Foods) has joined the initiative since then, bringing the current number of participants to 16.

Report Objectives

The Impact of Industry Self-Regulation on the Nutritional Quality of Foods Advertised on Television to Children provides the first independent, comprehensive evaluation of the Children's Food and Beverage Advertising Initiative and its impact on the children's food marketing environment on television. Commissioned by Children Now and conducted by Dale Kunkel, Ph.D., and colleagues at the University of Arizona, this research report examines the food advertising environment during children's television programming. The report compares advertising patterns in 2005, several years before the Children's Food and Beverage Advertising Initiative went into effect, to those in 2009, after the initiative was in place. The data from this report indicate the extent to which this initiative has succeeded at achieving the goals specified by the Institute of Medicine in 2006.

One of the key measures Dr. Kunkel used to assess the impact of the Children's Food and Beverage Advertising Initiative is the U.S. Department of Health and Human Services' Go-Slow-Whoa food rating system. This framework is part of the We Can! (Ways to Enhance Children's Activity & Nutrition) program, designed to help parents make healthier choices for their children and families. Please refer to the Appendix of this report for information on the Go-Slow-Whoa food rating system.

Key Findings

The majority of advertisements from companies participating in the Children's Food and Beverage Advertising Initiative are for nutritionally poor Whoa products, which should only be consumed on special occasions (see Figure 1, p. 7).

Despite industry claims that food marketing to children would be limited to healthier products through the initiative, this study finds that more than two-thirds (68.5%) of all advertising by participating companies is for foods and beverages in the Whoa category, the lowest category of nutritional quality. These Whoa products should be consumed only on "special occasions, such as your birthday."

Roughly one-third (31%) of the food ads from companies participating in the initiative are for Slow products, which have moderate nutritional value but should be consumed only "sometimes, at most several times a week."

Healthy food advertising is invisible.

Ads for truly healthy Go products, such as vegetables, fruits, whole grain breads and other products that can be consumed "anytime," account for less than 1% of all advertising from participating companies. There is no increase in the proportion of ads for healthy products in 2009 from 2005, before the initiative went into effect.

It would require 10 hours of viewing children's television programs to find one healthy food ad. During that same period, a child viewer would see 55 ads for Whoa foods and 20 ads for Slow foods. In summary, fewer than one in 100 food ads promote a healthy product that can be eaten safely on a daily basis.

Licensed characters are increasingly used to promote nutritionally poor food and beverage products to children.

Research shows that licensed characters are particularly effective at influencing children because children trust the characters they see in program content. Consequently, the Institute of Medicine's report recommended that licensed characters should be used "only for the promotion of foods and beverages that support healthful diets." Yet companies participating in the initiative have nearly doubled their use of licensed characters over the past four years, from 8.8% in 2005 to 15.2% in 2009, and roughly half of all ads with such characters (49.4%) are for nutritionally poor Whoa products.

Despite the industry's self-regulatory pledges, which specify that participating companies will only use licensed characters to promote their "better-for-you" products, none of the healthier foods and beverages they marketed with licensed characters qualify as a Go product that children can consume every day.

More than one-quarter of all food and beverage advertising to children originates from companies that do not participate in the initiative.

FIGURE 1
Nutritional Quality of Food Ads in 10 Hours of Children's Programs

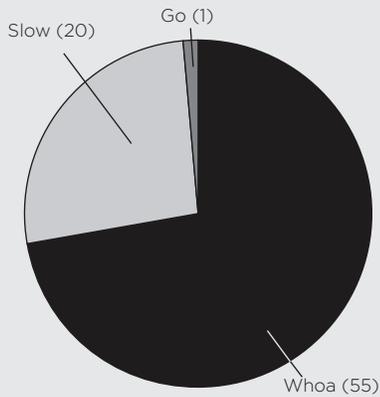
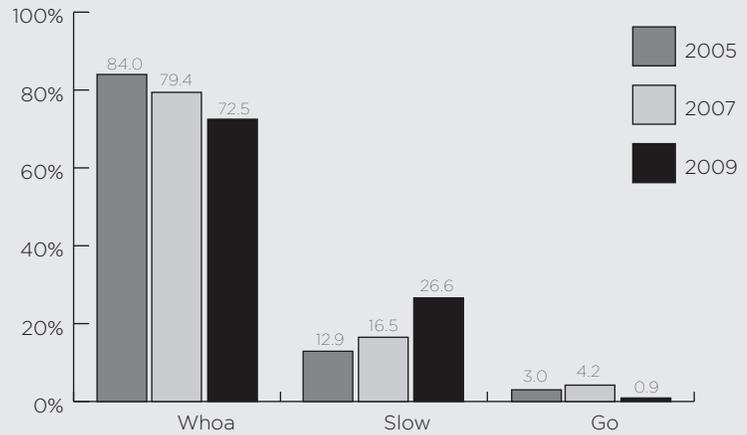


FIGURE 2
Over Time Comparisons of Nutritional Quality in Food Ads for Industry, Overall



Across all children's food ads on television, 28.7% are by companies that do not participate in the Children's Food and Beverage Advertising Initiative; therefore, their marketing practices to children are not guided by its measures.

In addition, the major broadcast networks and cable channels that deliver children's programming and advertising play no role in the initiative. This creates another loophole, allowing a substantial proportion of food advertising to children to occur, without holding it to standards regarding the nutritional quality of the advertised products.

Under self-regulation, overall improvement in the nutritional quality of foods marketed on television to children is negligible (see Figure 2, this page).

Despite calls for dramatic reform from public health officials and advocates, food and beverage advertising to children continues to be predominated by products of poor nutritional value. In 2005, prior to the inception of the Children's Food and Beverage Advertising Initiative, 84% of foods marketed to children were for Whoa products. In 2009, Whoa products have decreased only to 72.5%. Thus, at this pace, it would take until 2017 for nutritionally poor Whoa products to decline to only half of all foods marketed to children and until 2033 for them to disappear entirely.

Conclusion

The findings in this report demonstrate that the Children's Food and Beverage Advertising Initiative has not improved the overall nutritional quality of ads targeting children. Moreover, the food and beverage industry has failed to meet the Institute of Medicine's principal recommendation to voluntarily shift the balance of children's food marketing away from low-nutrient, high-density foods to "advertising strategies that promote healthier foods, beverages, and meal options."

The advertising environment targeting children continues to expose them to nutritionally poor food products, contributing to the current childhood obesity epidemic. Children Now's study illustrates that the Children's Food and Beverage Advertising Initiative has failed to significantly improve this situation. As such, it is time for our nation's leaders to step forward and help ensure a healthy food advertising environment for our children.

Complete Report

Background

Childhood obesity has become one of the most serious threats to public health. Numerous factors contribute to this increasing epidemic, including reduced levels of physical activity for many children, shifting sociological elements that impact family eating patterns and the increased availability of convenience foods with little nutritional value (Institute of Medicine, 2005; Krishnamoorthy, Hart, & Jellalian, 2006). This study addresses yet another distinct factor that contributes to childhood obesity: television advertising that promotes low-nutrient, high-calorie food products to children.

Existing research shows that children's exposure to television advertising for non-nutritious food products is a significant risk factor contributing to childhood obesity (Institute of Medicine, 2006; Kaiser Family Foundation, 2004; Vandewater & Cummings, 2008). In the most comprehensive review of research to date, the Institute of Medicine of the National Academies concluded that television commercials significantly influence children's food preferences, purchase requests and dietary intake. The fact that younger children do not comprehend the persuasive intent of advertising messages (Calvert, 2008; Gunter, Oates, & Blades, 2005; Kunkel et al., 2004) and televised food advertising has long been dominated by low-nutrient, high-calorie products (Larson & Story, 2008; Palmer & Carpenter, 2006) exacerbates concern in this area. The IOM (2006) report summed up the situation, observing that "food and beverage marketing practices geared to children and youth are out of balance with healthful diets, and contribute to an environment that puts their health at risk" (p. 374). A comparable conclusion was reached in an earlier review of research conducted for a similar United Kingdom government inquiry (Hastings et al., 2003).

Prodded by this scientific evidence, policy-makers have devoted increasing attention to the issue of food marketing to children as they seek to address the growing epidemic of childhood obesity. The Federal Trade Commission (FTC) has conducted hearings and issued reports on the topic (FTC, 2008; Holt, Ippolito, Desrochers, & Kelley, 2007); the Federal Communications Commission (FCC) hosted an

inter-governmental Task Force on Media and Childhood Obesity (FCC, 2009); and individual members of Congress have issued statements reflecting their concern (Harkin, 2007; Markey, 2007). Indeed, concern about the topic is not limited to the U.S. For example, the United Kingdom recently adopted strict governmental regulation that prohibits the advertising of non-nutritious, or so-called "junk food," products during programs that attract significant audiences of children (Hawkes, 2007).

In an effort to respond to public concern about the nutritional quality of the foods marketed to children, a coalition of major food companies has collaborated with the Council of Better Business Bureaus to establish an industry self-regulatory framework designed to improve the nutritional quality of foods advertised to children (Council of Better Business Bureaus, 2007). This effort has been termed the Children's Food and Beverage Advertising Initiative. Among the companies participating in the initiative are many of the nation's largest food conglomerates. At the time this study began in early 2009, a total of 15 companies participated in the initiative. These include:

- Burger King Corporation
- Cadbury Adams USA
- Campbell Soup Company
- Coca-Cola Company
- ConAgra Foods, Inc.
- The Dannon Company
- General Mills, Inc.
- Hershey Company
- Kellogg Company
- Kraft Foods, Inc.
- Mars, Inc.
- McDonald's USA
- Nestle USA
- PepsiCo, Inc.
- Unilever United States

As part of the industry initiative, each company has issued a detailed pledge of its commitment to limit its marketing efforts targeted at children to healthier food products, or in some cases, messages that promote healthy lifestyles. It is important to note, however, that each company defines what constitutes a "healthier" food product based on differing nutritional criteria. Participating companies have also pledged to restrict the use of licensed characters solely to advertising for foods that meet their specific nutritional standards for

healthier products, or in some cases, products that are generically considered to be “healthy dietary choices.” Proponents of industry self-regulation assert that this initiative should resolve the concerns that have been raised and neutralize any need for direct governmental regulation of food marketing to children. Indeed, the initiative asserts it will “change the mix of food and beverage products advertised to children to encourage healthier dietary choices and healthy lifestyles” in an effort to “change the landscape of child-directed advertising” (Peeler, Kolish, & Enright, 2009, p. 1).

This study provides an independent evaluation of how well industry self-regulation has accomplished these goals. While some of the participating companies’ pledges were announced as early as the summer of 2007, others have been added more recently, and some aspects of the pledges did not become fully operational until January 1, 2009. Clearly, then, 2009 provides the first opportunity to evaluate the efficacy and impact of the Children’s Food and Beverage Advertising Initiative on the overall marketplace of advertising to children.

To pursue this research agenda, there are two key focuses that we scrutinize. The first is the issue of whether or not each company has succeeded in fulfilling all of the elements of its pledge. Evaluating this issue requires careful measurement, given the lack of a uniform nutrition standard for defining healthy foods across the various companies. To accomplish this, products advertised in commercials targeted at children are linked to their parent corporation and then assessed for conformity with the applicable nutritional standards specified by that company.

A second and arguably more critical issue to be examined is the impact of the industry initiative on the overall environment of food advertising to children. Not all food companies participate in the program, which means the efforts of the initiative could be diluted by advertising for less healthy foods that originates from other sources (i.e., companies not participating in the initiative). Indeed, it is important to assess the proportion of the total volume of food marketing to children that is provided by companies participating in the initiative, in order to help evaluate its reach and impact.

Given the varying nature of the definitions of “healthier” food products that have been established by the participating companies, it is also critical to independently evaluate the nutritional quality of the overall marketplace of food advertising directed at children and to compare the patterns that are observed once the initiative is in effect with the levels that existed in the past. This is particularly important because of the inclusion of foods defined by industry as “better-for-you” as part of the self-regulatory marketing reforms. It remains to be seen whether foods defined as “better-for-you” (e.g., reduced fat Oreos) are indeed “good-for-you” (i.e., healthful), which is the requisite goal of advertising reform that seeks to reduce childhood obesity.

This study engages both of these critical tasks. It examines a broad base of advertising contained in a sample of more than 100 children’s television programs monitored between February and April of 2009. In the first part of the report, we present detailed information about the nature and extent of food marketing messages targeted at child audiences. In the second portion of the report, we provide an evaluation of the effectiveness of the industry’s effort at self-regulation, known as the Children’s Food and Beverage Advertising Initiative. In examining both of these areas, we benefit from previous studies of food marketing to children that we conducted in 2005 and 2007 (Kunkel, McKinley, & Stitt, 2008; Stitt & Kunkel, 2008). These previous studies employ sampling strategies and measures identical to the research reported here and, thus, provide optimal comparison points for tracking change over time in the food industry’s advertising practices targeted at children.

Finally, we note that this study employs a unique measurement strategy for evaluating the nutritional quality of advertised foods. Many previous studies that have assessed food advertising to children either measure product type without any evaluation of nutritional quality or, alternatively, report such detailed nutritional information that it is difficult to draw practical conclusions from the evidence. The former approach is clearly inadequate, particularly as marketers’ practices evolve toward healthier foods. While one might reasonably have surmised that a “fast food” ad represented a non-nutritious product in the distant past,

today such an ad might just as well present a fruit plate as opposed to a burger and fries. This underscores that the nutritional quality of the foods advertised in each commercial must be carefully measured, rather than inferred. We (Kunkel, McKinley, & Stitt, 2008; Stitt & Kunkel, 2008) successfully employed a measurement framework based on a consumer-oriented nutritional scheme devised by the Department of Health and Human Services as part of the agency's We Can! (Ways to Enhance Children's Activity and Nutrition) public information initiative. These measures simplify the evaluation of nutritional quality, while maintaining strong rigor and credibility, thus maximizing the value of the evidence produced by the study.

To summarize, this study provides a detailed examination of the overall landscape of televised food advertising to children. It identifies changes that have occurred between 2005 and 2009. The study also assesses compliance with the industry self-regulatory program known as the Children's Food and Beverage Advertising Initiative. Finally, the study analyzes the impact of industry self-regulation on the nutritional quality of foods advertised in the overall children's television marketplace.

In the next section, we detail the methodology used to conduct the research.

Method

Sample

This study examines food advertising in a broad base of children's programming on broadcast and cable television channels. The sampling design involves the creation of two composite days (one weekday, one Saturday) for each network included in the study. Composite days are created by videotaping programming at randomly selected times over a period of several months, until an entire day's schedule has been recreated through the composite collection process for each network. The sampling strategy captures one episode of all children's programming that regularly airs between 7:00 a.m. and 10:00 p.m. on each of the targeted channels. (See Stitt & Kunkel, 2008 for more detailed information regarding the procedure for creating composite days, as well as an explanation of how the technique

maximizes the representativeness of content-based findings.)

Children's programs were defined as any show with a V-chip rating of TV-Y (appropriate for all children) or TV-Y7 (appropriate for children, ages 7 and above), or any show with an FCC rating of E/I (educational/informational for children) that claims to target children under 12 years of age. The audiences for all of the programs sampled are consistently predominated by children younger than 12.

The channels examined in the study include all five national broadcast networks that deliver children's programming: ABC, CBS, Fox, NBC and CW. In addition, two national cable networks that are among the largest providers of children's programming are also included: Cartoon Network and Nickelodeon. The Disney Channel was omitted because the network does not present "outside" (i.e., non-Disney-based) advertising and, thus, food marketing would likely be minimal, if not absent entirely.

The 2009 sample included a total of 139 shows, representing 70.5 hours of children's programming across the seven networks included in the study. The programs were recorded between February 1, 2009, and April 15, 2009. Where applicable, we compared our 2009 data with findings from our previous studies, using identical methods and measures to analyze food advertising (Kunkel, McKinley, & Stitt, 2008; Stitt & Kunkel, 2008).

Measures

All non-program content (see Condry, Bence, & Scheibe, 1988) that appeared during each children's program was categorized by *SEGMENT TYPE* (i.e., commercial, program promotion, public service announcement) and measured for length of time. In order to provide context, descriptive information is provided at the outset of the Results section regarding the overall amount of time devoted to advertising. All other data reported in the study, however, are derived solely from the examination of commercials devoted to food products.

Each food commercial was first categorized by *PRODUCT TYPE*. Categories were constructed in an effort to discriminate more healthy from less healthy foods, while at the same time facilitating comparisons with previous research to

the greatest extent possible. When necessary, information required to properly classify advertised products was obtained by consulting ingredient labels on products and/or company websites. Categories included: sugared snacks, salted snacks, sugared beverages, sugared cereals, pastries/waffles, pasta, fast food/restaurants, dairy, fruits/vegetables/100% fruit juice, and prepackaged lunches, among others. Applicable products were considered 'sugared snacks' or 'sugared cereals' if sugar was one of the first three ingredients listed. Drinks were considered 'sugared beverages' if they included any added sugar.

In addition to classifying food commercials descriptively by product type, each advertisement was also categorized according to its fit with an evaluative food rating scheme devised by the U.S. Department of Health and Human Services (2005). The department employs the We Can! campaign to help parents select a healthy diet for their children (www.nhlbi.nih.gov/health/public/heart/obesity/wecan/index.htm), of which the centerpiece is a food rating system that differentiates products in three categories: Go, Slow and Whoa. Go foods are products rich in nutrients and relatively low in calories. They are low in fat and added sugar and, therefore, can be consumed "almost anytime" (U.S. Department of Health and Human Services, 2005, p. 14). Examples include vegetables, fruits, whole grain breads or breakfast cereals, fig bars, low-fat yogurt, nonfat milk and diet soda. Slow foods are higher in fat, added sugar and calories than Go foods, and should be consumed "sometimes, at most several times a week" (U.S. Department of Health and Human Services, 2005, p. 14). Examples include broiled hamburgers, nuts or peanut butter, waffles, most pastas, 100% juice, sports drinks and 2% low-fat milk. Whoa foods are high in calories and low in nutrients. They are highest in fat and added sugar, and should be consumed "only once in awhile or on special occasions" and then only in small portions (U.S. Department of Health and Human Services, 2005, p. 14). Examples include french fries, fried chicken or hamburgers, cookies, cakes, pies, ice cream, candy, whole milk and regular soda.

Food commercials were also evaluated for the advertisement's PRIMARY THEME/APPEAL. This measure has been used consistently in content

analyses of advertising to children (Barcus, 1977; Kunkel & Gantz, 1992) to represent the predominant promotional strategy embodied in the segment overall and is judged as a mutually exclusive variable for each commercial. Categories included: fun/happiness, taste/flavor/smell, premium, unique product, popularity of product and healthy product, among others. Ads are placed in a given category if they associate the product with the applicable theme. For example, a McDonald's ad in which Ronald McDonald jumps in a swimming pool and is shown exercising vigorously while playing various water activities with lots of children would be classified as a physical activity theme. An example of a fun/happiness appeal is an ad where children are shown going on a scavenger hunt to find the cereal they love, with the ad ending with the children shown as satisfied upon finding and eating the cereal. An example of a popularity theme/appeal is an ad where a parent is shown serving the product to a crowd of neighborhood children, all of whom are clamoring loudly for the food item.

Other tactics used by food marketers to increase the attractiveness of their products to children were measured, including the use of SPOKES-CHARACTERS (characters associated solely with the product, e.g., Cap'n Crunch, Ronald McDonald); LICENSED CHARACTERS/CELEBRITY PRODUCT ENDORSERS (characters whose popularity is not originally associated with a food product, e.g., Spongebob Squarepants, Dora the Explorer); CONTESTS; and WEBSITE PROMOTIONS (ad identifies a website address for children to visit that is sponsored by the food company, e.g., www.postopia.com).

To evaluate compliance with self-regulatory pledges regarding the nutritional standards and use of licensed characters, we compared all products observed in advertising monitored by the study to the nutritional guidelines specified by the relevant parent company, as part of the Children's Food and Beverage Advertising Initiative. To confirm product ingredients, we relied on information included in the labeling for each product.

Coding and Reliability

The classification of data for the study was accomplished by a group of seven coders. All coders were trained over an eight-week period and practiced extensively in order to achieve

acceptable levels of inter-coder reliability before beginning the process of generating data for the study. Reliability was assessed at the end of training and roughly once per week during the two-month period required to complete all classification of data. All advertising contained in a total of 10 randomly selected half-hour programs was evaluated by all coders and compared using Scott's pi to determine reliability coefficients. The programs contained 48 food commercials. All variables examined in the study achieved a level of reliability of .90 or above with the exception of primary theme/appeal, which yielded agreement at .76. This judgment is inherently more subjective and interpretive, and, thus, findings involving this attribute should be viewed with caution. Notwithstanding this one variable, all measures in the study proved highly reliable and, thus, the data can be viewed with confidence.

Results

This report of findings addresses two distinct topic areas investigated by our research. The first provides descriptive information analyzing the amount and type of food advertising delivered during children's television programming. Where possible, we compare the findings from our current data gathered in 2009 with patterns observed in our previous studies in 2005 and 2007. This first section also includes an overall assessment of the nutritional quality of the foods marketed on television to children. These data provide a clear picture of the environment of food advertising on television to children and how it has changed over the past four years.

The second aspect of our findings (below) evaluates the efficacy of the Children's Food and Beverage Advertising Initiative that was implemented in July 2007. As of early 2009, a total of 15 companies participated in the initiative, each one offering a unique commitment to improve their marketing activities targeted at children. Our evaluation employs two complementary perspectives. The first assesses whether or not the companies complied with their pledges, issued under the initiative program. The second, and arguably more critical analysis, examines the extent to which the industry's self-regulatory program

has successfully transformed the landscape of food marketing to children, from an emphasis on low-nutrient, high-density food products to an emphasis on healthier foods and beverages.

Amount and Type of Televised Food Marketing to Children

The findings reported in this section are organized according to key research questions addressed by the study.

QUESTION: How much food advertising is presented during children's programming?

Across the entire sample of 139 programs monitored in 2009, a total of 1,819 commercials were observed. Of these, 534 (29.5%) were food and beverage ads. This total base of advertising for food products is the foundation of all evidence presented in this report.

Table 1 compares the amount of food advertising on broadcast and cable television. Broadcast carried slightly higher levels of food advertising (8.8 ads/hour) than cable (7.2 ads/hour) in 2009. Across both media, children's programming presented an average of 7.6 food ads per hour.

The rate at which food ads appear during children's shows has declined over the four-year span of this study (see Table 2). Our previous research found an average of 10.9 food ads per hour appeared in 2005, and 8.5 per hour in 2007, compared to our current finding of 7.6 per hour in 2009. Across the 2005-09 study period, the overall number of commercial messages included in children's programming has remained relatively stable, with means ranging from 23.3 to 25.8 total ads per hour. Thus, food ads represent a smaller proportion of the overall children's advertising environment today than in the past, and young viewers are likely to encounter fewer food ads while watching children's programs in 2009 as compared to recent years. This shift is consistent with the widespread pattern of incremental reductions in traditional measured-media advertising practices by most marketers as they implement a corresponding increase in online and other digital media promotional efforts (Chester, 2008). Despite this

TABLE 1

Comparison of Time Devoted to Food Ads and Non-Food Ads

	Food Ads (N=534)		Non-Food Ads (N=1285)		Total Ads (N=1819)	
	N per hour	Minutes per hour	N per hour	Minutes per hour	N per hour	Minutes per hour
Broadcast	8.8	3:06	15.3	6:45	24.1	9:52
Cable	7.2	2:39	19	8:06	26.3	10:45
Overall	7.6	2:44	18.2	7:49	25.8	10:34

TABLE 2

Differences in Time Devoted To Food and Non-Food Ads Across Channel Type, 2005-2009

	Broadcast			Cable			Overall		
	2005	2007	2009	2005	2007	2009	2005	2007	2009
Food ads per hour	12.7 ^a	8.2 ^b	8.8 ^b	9.9 ^a	8.6 ^a	7.2 ^b	10.9 ^a	8.5 ^b	7.6 ^b
Minutes per hour devoted to food ads	5:14 ^a	3:16 ^b	3:06 ^b	3:52 ^a	3:33 ^a	2:39 ^b	4:22 ^a	3:29 ^b	2:44 ^c
Non-food ads per hour	11.5 ^a	13.3 ^{a,b}	15.3 ^b	13.4 ^a	15.2 ^a	19.0 ^b	12.8 ^a	14.7 ^b	18.2 ^c
Minutes per hour devoted to non-food ads	4:30 ^a	5:32 ^{a,b}	6:45 ^b	5:59 ^a	6:11 ^a	8:06 ^b	5:29 ^a	6:02 ^a	7:49 ^b
All ads per hour	24.2 ^a	21.5 ^a	24.1 ^a	23.2 ^a	23.8 ^a	26.3 ^b	23.7 ^a	23.3 ^a	25.8 ^b
Minutes per hour devoted to all ads	9:45 ^a	8:49 ^a	9:52 ^a	9:52 ^a	9:45 ^a	10:45 ^b	9:51 ^a	9:32 ^a	10:34 ^b

Findings with different subscripts are significantly different at $p < .05$.

shift, however, food commercials remain a significant presence on television and are still one of the most heavily advertised product types on that medium.

QUESTION: What types of food products are advertised to children?

A small number of popular categories accounts for the large majority of food advertising to children. In 2009, commercials promoting sugared cereals, fast foods/restaurants and sugared snacks comprised over 70% of all food advertising during children’s shows (see Table 3). This pattern has held relatively stable over the past several decades (Kunkel & McIlrath, 2003; Palmer & Carpenter, 2006). Consistent with this pattern, these same categories accounted for 67.6% of all food commercials in our 2005 study.

A noticeable shift from 2005 to 2009 is that fast foods/restaurants have increased their share from 20.8% to 35.5% of the total volume

of food advertising during children’s programming. In contrast, the proportion of ads devoted to sugared snacks declined from 20.8% to 10.1% during that same period. Most other aspects of the product profiles advertised to children remained relatively stable, just as they have in the past. Of particular note, the category of fruits/vegetables/100% juice remained almost invisible, accounting for 0.4% of all advertising during children’s programs in 2009, as compared to 0.7% in 2005.

QUESTION: What types of persuasive tactics are used to promote food products to children?

Each food commercial observed during the study was judged for its primary theme or appeal. Associating fun/happiness with the advertised product was the most common tactic used in advertising to children, accounting for 30.7% of all ads (see Table 4). Nearly as common, taste/flavor/smell was the primary theme in 28.8% of all ads. The offering of a

TABLE 3

Distribution of Food Product Types Shown During Televised Food Advertising to Children

Product Type	Broadcast	Cable	Overall
Sugared cereals (N=138)	18.2%	28.4%	25.8%
Fast foods/restaurants (N=190)	40.9%	33.8%	35.5%
Sugared snacks (N=54)	12.1%	9.5%	10.1%
Sugared beverages (N=38)	12.9%	5.2%	7.1%
Pasta (N=34)	4.5%	7.0%	6.4%
Salted snacks (N=33)	5.3%	6.5%	6.2%
Dairy (N=30)	5.3%	5.7%	5.6%
Pre-packaged lunches (N=8)	0.8%	1.7%	1.5%
Easy to prepare meals (N=4)	-	1.0%	0.7%
Fruits/Veggies/100% Juice (N=2)	-	0.5%	0.4%
Other (N=3)	-	0.7%	0.6%
<i>Columns sum to 100%</i>	<i>N=132</i>	<i>N=402</i>	<i>N=534</i>

TABLE 4

Primary Themes and Appeals Used in Televised Food Advertising to Children

	Broadcast	Cable	Overall
Fun/happiness (N=164)	31.1%	30.6%	30.7%
Taste/flavor/smell (N=154)	34.1%	27.1%	28.8%
Premium (N=90)	10.6%	18.9%	16.9%
Popularity of product (N=34)	2.3%	7.7%	6.4%
Unique (N=22)	5.3%	3.7%	4.1%
Product performance (N=10)	3.8%	1.2%	1.9%
Physical strength (N=10)	3.8%	1.2%	1.9%
Economy/price (N=10)	3.0%	1.5%	1.9%
Quantity/size/amount (N=8)	0.0%	2.0%	1.5%
Social context (N=6)	0.8%	1.2%	1.1%
Convenience (N=5)	3.0%	0.2%	0.9%
Texture (N=4)	0.8%	0.7%	0.7%
Healthier food (N=1)	-	0.2%	0.2%
Other (N=16)	1.5%	3.5%	3.0%
<i>Columns sum to 100%</i>	<i>N=132</i>	<i>N=402</i>	<i>N=534</i>

premium in addition to the product (e.g., a toy included with purchase of a children's meal) was the principal message in 16.9% of all food ads. Collectively, these three tactics account for the primary persuasive appeal in roughly three-fourths (76.4%) of all food advertising to children.

Among the least common type of themes were ads devoted primarily to information about the food product. For example, 1.9% of all ads emphasized economy or price, while 1.5% of ads focused on quantity/size/amount of the product. Commercials that emphasize the advertised food is a healthy product are extremely rare, at 0.2% of all food ads. As with

the types of products advertised, the primary theme/appeal in children's advertising has also remained remarkably stable across past decades (Kunkel & Gantz, 1992; Kunkel & McIlrath, 2003), so it is not surprising our current data show little, if any, change from the long-standing trends that have emphasized fun/happiness over product information.

Table 5 reveals that certain types of persuasive appeals are more closely associated with some products than others. For example, fun/happiness themes are used frequently in ads for salted snacks (66.7%) and fast foods/restaurants (48.4%). Fun/happiness themes are even more common in ads for children's easy-to-prepare meals (75%), though the small number of cases observed for this type of product (N=4) suggests some caution in interpreting this finding. The use of premiums is another tactic often employed to attract children to food products. Commercials for dairy products—primarily yogurt—were the most likely to use premiums as a persuasive tactic (56.7%), although fast foods/restaurants also used this technique as their primary appeal in more than a quarter of all ads (27.4%).

Table 6 assesses how frequently several other promotional tactics were employed within ads, including efforts to encourage children to visit food marketing company websites. While the overall volume of food advertising to children on television is down, as we reported above, other research has documented an increasing amount of online food marketing to children (Chester & Montgomery, 2007; Weber, Story, & Harnack, 2006). Thus, it is not surprising that more than half (57.1%) of all food ads airing during children's television programs in 2009 promote a food marketing company website (e.g., postopia.com, millsberry.com). In contrast, only 18.7% of all children's food advertising in 2005 promoted a company website, which means the rate of web site promos has more than tripled since 2005.

Food and beverage marketers also employ the use of product-based spokes-characters, as well as licensed characters, in their commercial messages. Research shows that licensed characters are particularly effective at influencing children because children trust the characters they are repeatedly exposed to in program content (Institute of Medicine, 2006). Indeed, the licensed characters chosen by advertisers

to promote food products are typically the most popular figures across the landscape of children's television.

Table 6 also indicates that product-based spokes-characters appear in roughly half (53.9%) of all food ads during children's programs. Spokes-characters are frequently used to promote sugared cereals, appearing in 68.1% of all such commercials, as well as fast foods/restaurants, appearing in 58.4% of their spots aired during children's programming. Licensed characters are used less often overall, but are still a regular presence, appearing in 15.7% of children's food ads.

Important policy questions have been raised regarding the use of licensed characters within commercials that promote non-nutritious food products to children. This issue will be addressed in the next section of this report.

QUESTION: What is the nutritional quality of the foods advertised during children's television programming?

As noted earlier, many previous studies of food marketing to children have limited their analysis to descriptive statistics regarding the frequency with which various product types (e.g., sugared cereals, salted snacks) are advertised. Unfortunately, this approach requires that inferences be drawn about the nutritional value of various food product categories. In some cases, such as ads for sugared cereals, these inferences may well be sound; but in others, such as tallying ads for fast foods/restaurants, a problem can occur, because a commercial could be devoted either to a fruit salad offering or a hamburger and fries meal. Each of these cases would clearly hold different implications for evaluating the nutritional quality of the foods advertised to children, yet both would simply be classified as a fast food/restaurant ad if measurement was limited strictly to product type.

One of the strengths of this study is its independent analysis of the nutritional quality of each food product presented in all commercials shown during children's television programming. To accomplish this analysis, we employ the U.S. Department of Health and Human Services' Go, Slow, Whoa food rating framework. Figure 1 demonstrates two clear trends in our findings regarding the nutritional

TABLE 5

Primary Themes and Appeals Used in Televised Food Advertising to Children, by Product Type

Product Type	Primary theme/appeal				
	Fun/happiness	Taste/flavor/smell	Premium	Popularity of product	Healthy product
Sugared cereals (N=138)	16.7%	44.2%	7.2%	13.8%	-
Fast foods/restaurants (N=190)	48.4%	7.4%	27.4%	1.0%	-
Sugared snacks (N=54)	7.4%	46.3%	18.5%	5.6%	-
Sugared beverages (N=38)	34.2%	39.5%	-	15.8%	-
Pasta (N=34)	5.9%	70.6%	2.9%	8.8%	-
Salted snacks (N=33)	66.7%	18.2%	-	3.0%	-
Dairy (N=30)	10.0%	-	56.7%	-	-
Pre-packaged lunches (N=8)	12.5%	87.5%	-	-	-
Easy to prepare meals (N=4)	75.0%	-	-	-	-
Fruits/Veggies/100% Juice (N=2)	50.0%	-	-	-	50.0%
Other (N=3)	-	66.7%	-	-	-
Overall (N=534)	30.7%	28.8%	16.9%	6.4%	0.2%

TABLE 6

Frequency of Selected Advertising Tactics, by Product Type

Product Type	Contests	Website Promotion	Product-based spokes-character	Licensed character
Sugared cereals (N=138)	2.9%	30.4%	68.1%	18.1%
Fast foods/restaurants (N=190)	-	55.3%	58.4%	23.2%
Sugared snacks (N=54)	18.5%	88.9%	18.5%	5.6%
Sugared drinks (N=38)	-	97.4%	2.6%	-
Pasta (N=34)	32.4%	91.2%	82.4%	-
Salted snacks (N=33)	-	36.4%	33.3%	-
Dairy (N=30)	56.7%	60.0%	66.7%	30.0%
Pre-packaged lunches (N=8)	-	100%	100%	12.5%
Easy to prepare meals (N=4)	50.0%	50.0%	100%	50.0%
Fruits/Veggies/100% Juice (N=2)	78.9%	100%	-	-
Other (N=3)	-	-	33.3%	-
Overall (N=534)	8.2%	57.1%	53.9%	15.7%

quality of the foods advertised to children in 2009.

First, the large majority of foods advertised to children in 2009 are nutritionally deficient

products that should be avoided in a child's regular diet. Nearly three-fourths (72.5%) of all food ads presented during children's programs promote Whoa products. Moderately healthy Slow products comprise roughly one-

TABLE 7

Average Number of Food Ads Per Hour by Nutritional Quality Categories

Product Type	Nutritional Quality Category		
	Whoa (N=387)	Slow (N=142)	Go (N=5)
Sugared cereals (N=138)	1.96	-	-
Fast foods/restaurants (N=190)	1.16	1.52	0.01
Sugared snacks (N=54)	0.77	-	-
Sugared beverages (N=38)	0.52	0.01	-
Pasta (N=34)	0.21	0.27	-
Salted snacks (N=33)	0.31	0.16	
Dairy (N=30)	0.37	0.04	0.01
Pre-packaged lunches (N=8)	0.11	-	-
Easy to prepare meals (N=4)	0.06	-	-
Fruits (N=2)	-	-	0.03
Other (N=3)	0.01	0.01	0.01
Overall (N = 534)	5.52	2.01	0.09

fourth (26.6%) of the total volume of food ads, while genuinely healthy Go food products are almost never advertised on television to children. They represent less than 1% (0.9%) of the 534 total food ads identified in the study.

The second important trend illustrated by Figure 1 is strong consistency in the nutritional quality of foods marketed to children across the two platforms of broadcast and cable television. That is, the nutritional quality of foods advertised does not vary during children's programming, regardless of whether one watches broadcast or cable channels. In either case, children will see an equivalent preponderance of nutritionally poor foods during the commercial interruptions.

Another perspective on the nutritional quality of foods marketed to children can be gained by evaluating the ad content contained in an average hour of programs. This perspective is presented in Table 7, which analyzes the average number of food ads shown per hour, with breakdowns for each of the three categories in the U.S. Department of Health and Human Services' Go, Slow, Whoa framework.

As reported above, our 2009 data show that youngsters will see an average of 7.6 food ads for every hour they spend watching children's programming (see Table 7). This overall total

breaks down as follows. Viewers will see 5.5 ads per hour for Whoa products and 2.0 ads per hour for moderately healthy Slow products. The frequency with which genuinely healthy food ads appear is so low, however, that a child would need to watch more than 10 hours of children's programs before he or she would encounter just one commercial for a Go product (see Figure 2). During the 10 hours of viewing that would be required to encounter just one healthy food ad, a child meanwhile would be exposed to a total of 55 ads for Whoa products and 20 ads for Slow products.

Summary of Key Findings

To review, this section of our report identifies two critical findings. First, food advertising to children on television has declined in volume between 2005 and 2009. The average number of food ads appearing during children's programming has dropped from 10.9 per hour in 2005 to 7.6 per hour in 2009. While most other patterns in televised food marketing to children have remained stable, this finding reflects a 30% reduction in the amount of food advertising presented during children's programming. Although that reduction is meaningful, it is important to recognize that food and beverage marketing retains a significant presence in the children's television environment, and young viewers will still be see thousands of food

FIGURE 1

Nutritional Quality of Products Shown in Food Ads, by Channel Type

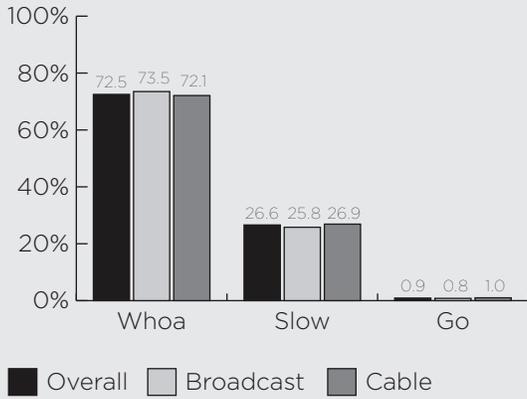


FIGURE 2

Nutritional Quality of Food Ads in 10 Hours of Children's Programs

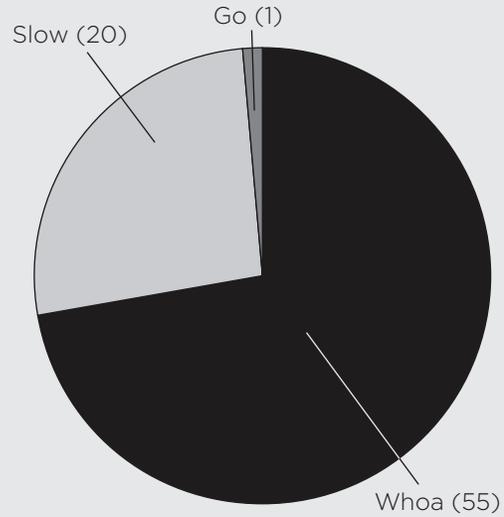
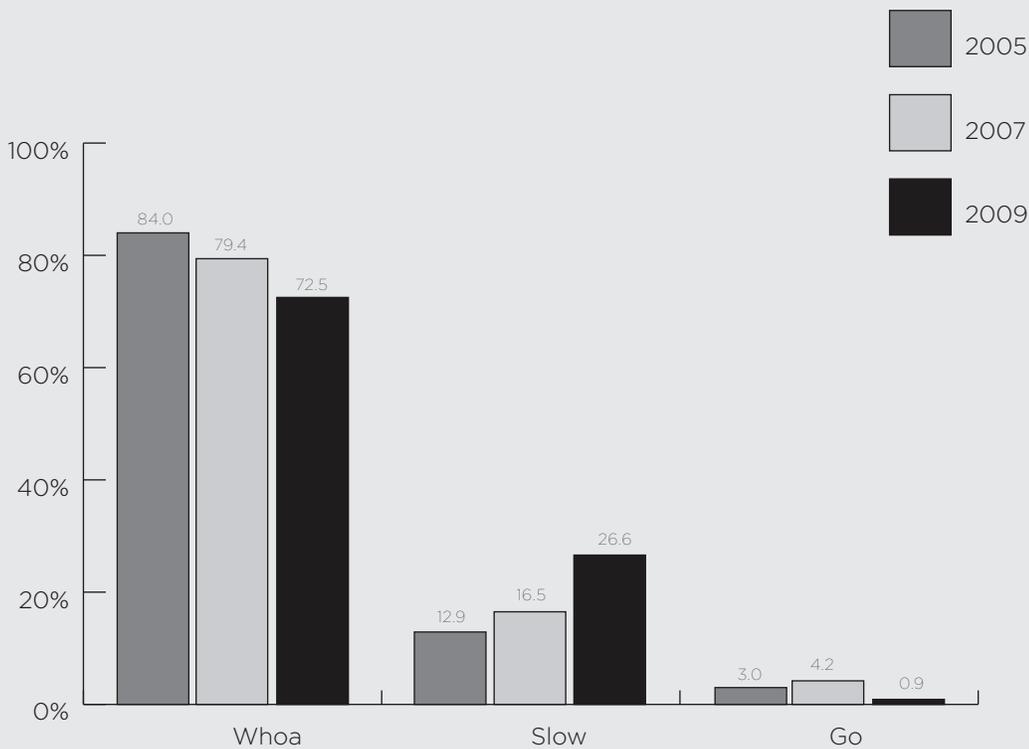


FIGURE 3

Over Time Comparisons of Nutritional Quality in Food Ads for Industry, Overall



ads each year during childhood, even at this reduced rate of exposure. Thus, the nutritional content of the foods advertised to children remains critically important, which leads to our second key conclusion.

The nutritional quality of foods marketed to children remains heavily skewed toward non-nutritious products that should not be part of a child's regular diet. That is, nearly three of every four food ads aired during children's television programs (72.5%) promote a Whoa product. Whoa products are high in calories and low in nutrients, and should be consumed "only once in awhile or on special occasions," according to the U.S. Department of Health and Human Services (2005, p. 14). The extent to which unhealthy foods predominate over healthier fare has declined somewhat since 2005, when Whoa products accounted for 84.0% of all food ads targeted to children (see Figure 3). Nonetheless, our data demonstrate that nutritionally poor food products continue their strong predominance in the children's advertising environment. Of arguably equal importance, ads for truly healthy foods, classified as Go products under the U.S. Department of Health and Human Services' scheme remain virtually invisible. Indeed, less than one of every 100 (0.9%) food ads aired on children's shows promotes a healthy product that children can eat safely on a daily basis.

Based on these findings, it is clear that, as of 2009, the food marketing industry has failed to meet the recommendation of the Institute of Medicine (2006) of the National Academies to voluntarily shift the longstanding emphasis in children's food marketing away from low-nutrient, high-density foods to a clear reliance on healthy food options. Moreover, it is worth noting that the Institute of Medicine issued a contingency recommendation if voluntary industry efforts were not successful in reversing the existing pattern. Specifically:

If voluntary efforts related to advertising during children's television programming are unsuccessful in shifting the emphasis away from high-calorie and low-nutrient foods and beverages to the advertising of healthful foods and beverages, Congress should enact legislation mandating the shift on both broadcast and cable television. (IOM, 2006, pp. 14-15)

Before drawing final conclusions from our research, it is important to consider the following section of this report, which provides a detailed evaluation of the efficacy of all key dimensions of the Children's Food and Beverage Advertising Initiative. Nonetheless, the findings from this first section of our study present the fundamental evidence for measuring achievement of the IOM's industry-wide goals.

While self-regulatory efforts have clearly accomplished slight change in the desired direction, reducing the prevalence of nutritionally poor food advertising from 84% to 72.5% of advertising during children's programs between 2005 and 2009, the reform accomplished to date falls far below the stated goal. In addition, the change observed is occurring at a pace that does not reflect the urgency of the public health crisis the nation faces involving childhood obesity.

Consider the following extrapolation. With the measuring stick for nutritionally poor food ads starting at 84.0% in 2005, and a demonstrated rate of change that has reduced this level roughly 12% over four years' time, one can project future expectations. At the current pace, it would take approximately eight more years, or until 2017, to reach the tipping point where the proportion of children's food advertising devoted to nutritionally poor products would first drop below the 50% level. Yet this calculation represents only half of the basic goal structure.

In addition to halting the predominance of nutritionally poor food products in TV advertising to children, the Institute of Medicine also implored the food and beverage industry to exercise its marketing muscle to promote genuinely healthy food options. In this regard, our data show that literally no progress has yet been achieved. Whereas 3% of all televised food marketing to children in 2005 were for genuinely healthy Go products, that level has fallen slightly to 0.9% in 2009. In other words, to the extent that industry advertising efforts have modestly reduced promotion of the worst possible food products to children, they have so far replaced those undesirable options with only slightly improved food offerings that are still of limited nutritional value in a child's daily diet.

Evaluation of Industry Self-Regulation

The second principal aspect of the study involves examination of the Children's Food and Beverage Advertising Initiative. In this section of the report, we address two key focuses: (1) how well do companies that participate in the initiative fulfill their pledges, and (2) how has the initiative impacted the overall nutritional quality of foods marketed on television to children?

To qualify as a participant in the Children's Food and Beverage Advertising Initiative, companies must agree "to devote at least half of their advertising directed to children under 12 on TV, radio, print and the Internet to 'better-for-you' products and/or to messages that encourage good nutrition or healthy lifestyles" (Kolish & Peeler, 2008, p. 4). In addition, participants commit to "reduce the use of third-party licensed characters in advertising primarily directed to children under 12, unless such advertising is for 'better-for-you' foods or includes healthy lifestyle messaging" (Kolish & Peeler, 2008, p. 4). While the initiative also includes commitments to limit advertising in terms of product placement, interactive games and in elementary school environments, only the two prongs cited above are relevant to this study's examination of television advertising and, thus, are the focus of this evaluation.

In addition to subscribing to the core principles of the initiative, each participating company offers an individual pledge that specifies its own unique criteria for defining a healthy food product. There is no uniform nutrition standard applied across all companies involved in the initiative pledge program. Rather, each participant establishes a distinct pledge, indicating its commitment in terms of:

- (a) overall restrictions on food advertising to children, such as a promise not to advertise any products to child audiences;
- (b) standards that must be met regarding the nutritional quality of food products that will be advertised to children;
- (c) limits on the use of licensed characters in food advertising to children,

such as a promise to not use licensed characters at all, or to use them only in ads for products that meet certain nutritional standards.

Across the 15 companies studied, four of them (Cadbury Adams, Coca-Cola, Hershey's, Mars) have pledged not to advertise any of their products to audiences of children under 12. The remaining 11 companies have all devised independent criteria for defining a healthy food product (labeled "better-for-you" under the initiative program specifications), and all but one have pledged to limit their advertising to children exclusively to these products. Finally, the 11 participating companies that advertise to children all include in their pledges some type of commitment to limit the use of licensed characters to advertising that promotes healthy foods. The most common pledge is that licensed characters will be featured only in ads for products that meet a company's nutritional standards for healthy foods, although some participants offer a more vague commitment to limit licensed characters to advertising for "healthy dietary choices" (McDonald's) or that will "support sound food choices" (Campbell Soup).

As with the prior section, the findings to evaluate the industry's self-regulatory initiative (below) are organized according to key research questions addressed by the study.

QUESTION: Are companies that participate in the Children's Food and Beverage Advertising Initiative fulfilling their individual pledges regarding the nutritional quality of advertised foods?

As noted above, four of the participating companies have pledged not to advertise any food products to children. Across the entire sample for this study, spanning a total of 139 children's programs on broadcast and cable channels, no commercials from any of these companies were ever observed, and thus their portion of the pledge program was fulfilled. It is possible that this aspect of the initiative program contributes to the reduction observed in the overall amount of food advertising presented during children's programming in 2009, as compared to 2005.

Of the remaining 11 companies, our study observed advertising messages aired by eight of

them (Burger King, Campbell Soup, ConAgra Foods, Dannon, General Mills, Kellogg, Kraft Foods, and McDonald's USA) (see Table 8). No advertising was encountered for products marketed by Nestle, PepsiCo or Unilever across any of the 139 children's programs sampled for our research between February and April 2009.

Of 381 total ads from the eight companies participating in the initiative program, all complied with the unique criteria specified by the parent company's nutritional guidelines. That is, each ad featured a product that met all elements of the applicable company's nutrition standards, as specified in its individual pledge. Some ads were encountered that placed little, if any, emphasis on a specific food product. For example, a McDonald's ad that showed Ronald McDonald preparing for bedtime never mentioned a particular advertised product, though it included a one-second-long visual depiction of a pledge-compliant Happy Meal on his night stand in the background. While this commercial might be argued to promote McDonald's general brand and overall product portfolio, which includes many non-nutritious options, the study ultimately judged this ad and a handful of others like it to be devoted to a pledge-compliant food product, based on the brief visual presentation of a pledge product. Thus, such ads were not considered a violation.

In sum, our data make clear that all participants in the Children's Food and Beverage Advertising Initiative have complied with all aspects of their commitments regarding nutritional guidelines for the foods advertised to the child audience, as specified by each company. We demonstrate with additional data below, however, that this finding does not warrant the conclusion that the foods marketed to children by participating companies should necessarily be considered healthy.

QUESTION: How much of the televised food advertising targeted at children originates with companies that participate in the Children's Food and Beverage Advertising Initiative?

Of 534 total food ads identified in the study during 2009, 71.3% (N=381) came from companies participating in the industry self-regulatory program. The remaining 28.7% (N=153) were

for products from companies that are not participating in the pledge program. Thus, the current reach of industry self-regulation stands at a bit more than two-thirds of all commercials presented during children's programs.

Table 8 indicates that four companies predominate in the marketplace of children's food advertising. Kraft, McDonald's, General Mills, and Kellogg collectively account for 58.3% of food advertising observed overall and for 81.9% of all advertising from pledge companies.

The level of participation in the industry's self-regulatory initiative has grown since July 2007, when the program was initially unveiled with 11 participating companies. According to the Council of Better Business Bureaus, the parent organization that supervises the Children's Food and Beverage Advertising Initiative, the original 11 companies accounted for "at least two-thirds of the television advertising expenditures for food and beverage advertising to children in 2004" (Kolish & Peeler, 2008, p. 3). It is important to note, however, that the inclusion of four additional companies has not appreciably expanded the reach of food advertising to children that is subject to industry self-regulation, which stands at 71.3% in 2009.

This may be due, in part, to the fact that some companies participating in the pledge program have reduced and/or discontinued entirely their food marketing efforts targeted at children. For example, five companies (Cadbury Adams, Hershey, Nestle, PepsiCo and Unilever) that currently participate in the self-regulatory program collectively accounted for 15% of the total of 557 ads observed in our previous study in 2005. In contrast, no advertising by any of these companies was identified across 139 children's programs in 2009.

This creates an ironic situation. While it may be desirable from a public health perspective to see companies that offer low-nutrient, high-density food products voluntarily discontinue their advertising to children, this outcome may provide opportunity for other companies that do not adhere to industry self-regulation to enter the market and/or to increase their advertising efforts in order to gain competitive advantage over initiative participants. Should this be the case, the net impact of the industry self-regulatory initiative, in terms of significantly affecting the overall landscape of

TABLE 8

Distribution of Food Ads, by Pledge Company

Pledge Company	N of Ads	% of All Food Ads	% of Pledge Co. Food Ads
Kraft	89	16.7%	23.4%
McDonalds	85	15.9%	22.3%
General Mills	81	15.2%	21.2%
Kellogg's	57	10.5%	15.0%
Campbell's	19	3.6%	5.0%
Dannon	19	3.6%	5.0%
Con Agra	17	3.2%	4.5%
Burger King	14	2.6%	3.6%
Overall	381	71.3%	100%

1. Four participating companies (Cadbury Adams, Coca-Cola, Hershey's, Mars) pledged not to engage in child-directed food and beverage advertising.

2. No ads were observed for Nestle, Pepsi, or Unilever during the study period.

televised food advertising, could be severely compromised.

Regardless of any conjecture about future developments, our data indicate that more than one-quarter (28.7%) of all televised food marketing to children is not subject to any of the precautions or protections provided by the Children's Food and Beverage Advertising Initiative.

QUESTION: What is the nutritional quality of the foods marketed to children by companies that participate in the Children's Food and Beverage Advertising Initiative?

Despite the fact that all food advertising by industry self-regulatory participants complies with each company's nutritional pledge, our data indicate that two-thirds of all pledge company advertising to children is devoted to products of the poorest nutritional quality, according to the Go-Slow-Whoa food rating system. Specifically, 68.5% of all food ads aired by participating companies promote non-nutritious Whoa products, while 31.0% feature moderately healthy Slow products and only 0.5% are for truly healthy Go products. These data illustrate a fundamental disconnect between the way in which food products are defined as "healthy," according to the pledge criteria employed for the Children's Food and Beverage Advertising Initiative, and the way in which healthy nutritional quality is judged from an independent perspective.

As noted in a previous section, the fundamental policy goal advocated by the Institute of Medicine is to reverse the children's food advertising environment by "shifting the emphasis away from high-calorie and low-nutrient foods and beverages to the advertising of healthful foods and beverages" (IOM, 2006, pp. 14-15). To be clear, this recommendation does not seek to have the industry merely reduce the unhealthy ingredients in high-calorie, low-nutrient foods and beverages in a manner that renders them less unhealthy. Rather, the Institute of Medicine clearly articulates a goal that food marketers should shift their advertising to healthy foods and beverages—with "healthy" judged from an absolute, not a relative, perspective. Herein lies the disconnect between the aspirations of the industry's self-regulatory program and the public health goals currently sought to help defeat the epidemic of childhood obesity.

The near-term public health goal is to achieve a predominance of healthy foods in advertising to children, rather than the opposite pattern that has prevailed long into the past. Yet the near-term industry response, in the form of the Children's Food and Beverage Advertising Initiative, addresses the issue from a different angle. Most companies allow products to qualify as "healthier" under their nutritional standards simply as a function of altering the ingredients to modestly reduce health risk from heavy consumption. For example, an existing

FIGURE 4
Over Time Comparisons of Nutritional Quality in Food Ads for Pledge Companies

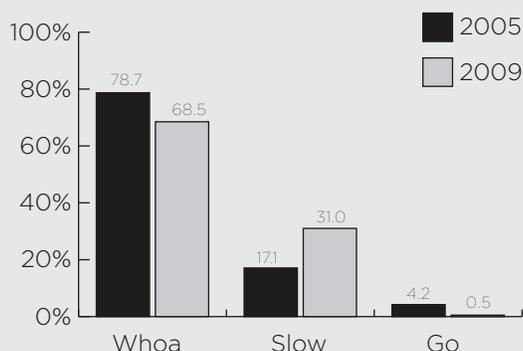


FIGURE 5
Over Time Comparisons of Nutritional Quality in Food Ads for Non-Pledge Companies

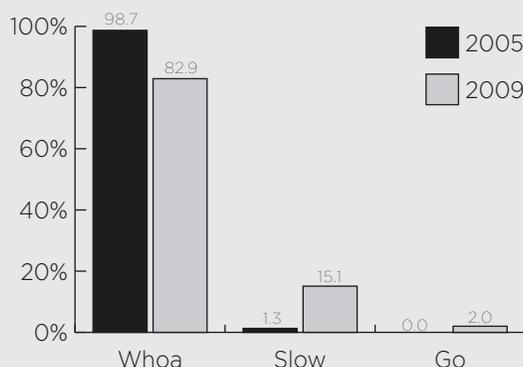


FIGURE 6
Comparisons of Nutritional Quality in Food Ads for Pledge and Non-Pledge Companies, 2009



product that has substantial added sugar, fat or salt can qualify for the “healthier” designation if part of the added ingredient is removed from the product recipe, despite the fact that the product still includes levels of added ingredients (i.e., sugar, fat, salt) considered to be excessive. Indeed, the food marketing industry has coined the term “better-for-you” specifically to describe such products in an effort to imply they represent a healthful food.

This study demonstrates that the majority of food products advertised to children that are classified as “better-for-you” are not really good-for-you, at least according to the U.S. Department of Health and Human Services’ consumer food rating scheme. When viewed from an absolute, rather than a relative perspective, the majority of foods that comply with the nutritional standards of the industry’s self-regulatory initiative are not considered healthful. Indeed, almost none (0.5%) are truly healthy Go products, while only about one-third (31.0%) are considered moderately healthy Slow products.

Figure 4 illustrates precisely what the industry’s self-regulatory initiative has achieved in terms of improving the overall nutritional quality of foods marketed to children. In 2005, the concern about food marketing to children had not fully surfaced as a critical public health issue, and no self-regulation could be seen on the horizon. In 2007, the initial pledges for the Children’s Food and Beverage Advertising Initiative were announced and became operational. Thus, by comparing the industry’s advertising practices in 2005 to those of 2009, it is possible to quantify the improvements accomplished by the Children’s Food and Beverage Advertising Initiative. Over a four-year span, the predominance of Whoa products diminished from an initial level of 78.7% of all ads from participating pledge companies to 68.5% in 2009. In complementary fashion, the share of pledge company advertising devoted to moderately healthy Slow products increased from 17.1% in 2005 to 31.0% in 2009, while advertising for Go products remained extremely low across both times of measurement.

This change is a positive one, and the industry deserves some credit for achieving it. That said, the degree of improvements accomplished in the overall nutritional quality of foods marketed to children clearly fall far short

TABLE 9

Distribution of Food Ads, by Non-Pledge Company

Non-Pledge Company	N of Ads	% of All Food Ads	% of Non-Pledge Co. Food Ads
Chuck E. Cheese's	66	12.4%	43.1%
Topps	29	5.3%	19.0%
Sunny Delight	14	2.6%	9.2%
Subway	14	2.6%	9.2%
Perfetti Van Melle	11	2.1%	7.2%
IHOP	9	1.7%	5.9%
Wrigley's	2	0.4%	1.3%
Yum!	2	0.4%	1.3%
Jack in the Box	2	0.4%	1.3%
Johnson & Johnson	2	0.4%	1.3%
Novartis	1	0.2%	0.6%
Mrs. Butterworth	1	0.2%	0.6%
Overall	153	28.7%	100%

of the objectives specified by the Institute of Medicine.

QUESTION: What is the nutritional quality of the foods marketed to children by companies that do not participate in the Children's Food and Beverage Advertising Initiative?

Another means of evaluating the benefit of industry self-regulation is to examine the advertising practices of those companies that do not participate in the initiative. As noted above, companies that do not participate in the pledge program accounted for 28.7% of all food advertising during children's programming. Chuck E. Cheese's is the most prominent non-participant, accounting for 12.4% of children's food advertising observed in the study (see Table 9). Another visible non-participant is Topps, makers of Ring Pop and Baby Bottle Pop candies, among others. This company accounts for 5.3% of all food ads observed in 2009. Our study also identified ads from 10 other national companies that are not included in the voluntary program.

Figure 5 presents the nutritional profile of the food products advertised by non-participating companies. In 2009, 82.9% of ads from non-pledge companies were for Whoa products. Of the remainder, 15.1% were for Slow products and 2.0% were Go products.

In terms of change over time, the nutritional quality of advertising by non-pledge companies improved from 2005 to 2009. The proportion of ads devoted to Whoa products declined from 98.7% in 2005 to 82.9% in 2009, while the frequency of moderately healthy Slow product advertising increased from 1.3% to 15.1% over the same period. Advertising for Go products remained extremely low across both times of measurement.

It is important to compare the advertising practices of companies that do and do not participate in the industry's program of self-regulation. That issue is addressed in the next section.

QUESTION: How does the nutritional quality of food marketed by non-pledge companies compare with the nutritional quality of foods marketed by pledge companies that participate in the Children's Food and Beverage Advertising Initiative?

Figure 6 demonstrates that non-pledge companies advertise nutritionally poor Whoa products at a much higher rate than companies that participate in the voluntary pledge program. Specifically, 82.9% of non-pledge company food advertising was for Whoa products in 2009, as compared to only 68.5%

for pledge companies. Conversely, pledge companies are twice as likely to advertise a moderately healthy Slow product to children (31% of all their food advertising) compared to non-pledge companies (15.1% of all their food advertising). The amount of advertising devoted to healthy Go products is so low overall as to render any comparison meaningless.

These data indicate that, from a comparative perspective, companies participating in the Children's Food and Beverage Advertising Initiative tend to devote more of their marketing efforts to foods of better nutritional quality than non-participating companies. Concomitantly, pledge participants devote less of their advertising to foods of the poorest nutritional quality, as compared to non-participants.

QUESTION: What proportion of foods marketed to children by pledge companies meet the best nutritional standards specified by all companies that participate in the Children's Food and Beverage Advertising Initiative?

A significant limitation of the self-regulatory program is the lack of any uniform nutritional standard for identifying food products that qualify as healthy and are, therefore, considered appropriate for advertising to audiences of young children. Indeed, it is puzzling that a food product classified as healthy by one company's standards can fall short of the nutritional guidelines of another because of the varying nutritional criteria employed across the full range of participating companies. In such a case, an identical product could be judged as either healthy and pledge-compliant or non-nutritious and a pledge violation, depending on its affiliation with one particular corporate parent, as compared to another.

Consider the following example: Cocoa Puffs cereal meets all the applicable criteria specified by its parent corporation, General Mills, to qualify as a healthy product. It contains no more than 175 calories per serving, no trans fats and no more than 12 grams of added sugar, among other criteria. If the same product was marketed by Kraft Foods, however, it would fall short of Kraft's guideline, which specifies that a healthy product contains no more than 25% of total calories from added sugar. This means that Cocoa Puffs is considered a healthy product according to nutritional guidelines for cereals specified by General Mills, but it would

not qualify as healthy according to the nutritional guidelines for cereals marketed by Kraft Foods.

This is not an isolated example. There are seven other General Mills' cereal products featured in ads and observed in this study that fit the same profile; they are judged as healthy by their parent company's set of standards but would not be classified as such by the nutritional guidelines of another participating company. Moreover, this example is not an indictment of lax nutritional standards on the part of General Mills. This pattern of inconsistency is pervasive, and examples of similar conflicts can be identified when comparing many products across differing pairs of company standards.

At its root, this situation suggests that each company tailors its unique nutritional guidelines to define healthy foods by carefully weighing the implications of each factor for its particular product portfolio. It implies that shades of grey in close call decision-making may be shaped at least in part by a company's self-interest in qualifying more of its products in the "healthy" category. As a result, it means that even though each participating company may fully comply with its pledge commitments, that does not necessarily mean all foods marketed to children that meet those company-based standards would actually qualify as healthy when judged from an independent, neutral perspective.

Many observers suggest the optimal approach to evaluate the nutritional quality of foods marketed to children would be to employ a uniform nutritional standard, whether or not that standard is applied by industry self-regulation or governmental regulatory policy (Miller, 2008). In an effort to apply a level-playing field test that fairly evaluates the nutritional quality of foods marketed to children by self-regulatory participants, we have devised a set of uniform nutritional standards based entirely on guidelines already implemented by one or more companies as part of the Children's Food and Beverage Advertising Initiative. We have devised a metric that we term an Optimal Composite Nutritional Standard (OCNS). The OCNS is specific to certain types of products, such as (a) children's meals and (b) breakfast cereals, which are the two examples we employ here.

To construct the OCNS for children's meals, we

consider the basic nutritional guidelines specified by the initiative, one criterion at a time: number of calories per serving, amount of calories from fat, amount of calories from saturated fat, amount of calories from added sugar and amount of sodium. For each criterion, we search through the entire range of standards indicated in the pledges across all participating companies and then identify the guideline that is the best, or “optimal,” from a child health perspective. For example, when devising the OCNS for children’s meal products, we note that Burger King defines a healthy meal as no more than 560 calories per serving; ConAgra (maker of Kid Cuisine) specifies no more than 500 calories; and both Kraft (maker of Lunchables) and McDonald’s stipulate no more than 600 calories per serving in order for a meal to qualify as healthy. Across this entire range, the optimal standard offered by a participating company is 500 calories per serving, so we select that as the applicable standard for the OCNS. The process is then repeated across all criteria to identify the optimal guidelines offered by participants in the self-regulatory program, ultimately yielding an Optimal Composite Nutritional Standard for children’s meal products.

Before proceeding further, we acknowledge that the product of this process might be criticized as insufficient in terms of promoting child health. While it is based on the best standards already endorsed and implemented by the industry, one could argue that even those standards might privilege corporate self-interest over children’s needs. Some nutritionists assert that all guidelines employed by the industry to identify “healthy” foods are inherently suspect and inadequate (Neuman, 2009), with more rigorous and independent criteria called for. Without necessarily defending the OCNS, we offer it as a vehicle to assess how well food marketing to children currently meets the best nutritional standards specified by companies participating in the Children’s Food and Beverage Advertising Initiative. We offer it to gain a complementary perspective that assesses the adequacy of the initiative at improving the nutritional quality of foods marketed to children in addition to our use of the U.S. Department of Health and Human Services’ Go-Slow-Whoa framework.

Table 10 reports the results from our application

of the OCNS to all ads aired by pledge companies for children’s meal products. As noted in a previous section, all ads from Children’s Food and Beverage Advertising Initiative participants complied with the applicable company-specific nutritional guidelines. Table 10, however, indicates that, across all commercials for meal products from participating companies, only 12% of products meet the OCNS criteria. Only meals marketed by Burger King comply with all applicable standards. In contrast, 88% of the meal products advertised by participating companies fall short on one or more of the uniform nutritional standards that comprise the OCNS, including all offerings from ConAgra, Kraft, and McDonald’s.

A second area to which we apply the Optimal Composite Nutritional Standard is breakfast cereals. A total of 20 different cereal products marketed by three participating companies appeared in 138 ads identified by the study. Table 11 reveals that only 8% of all the products featured in ads meet the OCNS criteria and, thus, would be classified as healthy foods. These include two well-known products, General Mills’ Cheerios and Kellogg’s Rice Krispies. In contrast, 92% of all cereals advertised by companies participating in self-regulation fall short on one or more of the uniform nutritional standards that comprise the OCNS.

To summarize, because the Children’s Food and Beverage Advertising Initiative lacks a uniform nutrition guideline, and, thus, the standards for defining a healthy food vary substantially from one company to another, this study compiled a list of the best nutritional standards employed by self-regulatory participants in two food product areas: children’s meals and breakfast cereals. This set of standards is termed the Optimal Composite Nutritional Standard. Our analysis revealed the overwhelming majority of advertising from companies participating in the initiative do not meet these best standards shared by their peers in the two product areas we examined. Specifically, 88% of all advertised products fell short in the area of children’s meals, while 92% failed the test among breakfast cereals.

Like our previous finding—that roughly three-fourths of all food advertising that fully complies with the pledges of self-regulatory participants is actually of poor nutritional category—the outcome here seems to further question the

TABLE 10

Pledge Company Compliance with Optimal Composite Nutritional Standard for Children’s Meal Products

Parent Company	Product	% of all meals shown	< 500 Calories	< 30% Calories from fat	< 10% Calories from saturated fat	< 10% Calories from added sugar	< 600 mg Sodium
Burger King	Kids Meal: Macaroni & Cheese	11	+	+	+	+	+
	Meal 3: Burger Shots	1	+	+	+	+	+
Conagra	Kid Cuisine: All Star Chicken Nuggets	2	+	-	+	-	-
	Kid Cuisine: Magic Cheese Stuffed Crust Pizza	2	+	+	-	-	-
Kraft	Lunchables: Extra Cheesy Pizza	8	+	+	+	-	-
McDonalds	Happy Meal: Chicken McNuggets	57	+	+	+	-	-
	Happy Meal: Snack Wrap	19	+	+	+	-	-

legitimacy of the nutritional guidelines used for the Children’s Food and Beverage Advertising Initiative. Simply put, most foods considered “healthier” by the nutritional guidelines established by one company would not qualify under the standards employed by one or more of their competitors. This lack of a level playing field means consumers may be confused or misled, while companies are allowed to define products as healthy when clearly they are not, as judged from an independent perspective.

QUESTION: Are companies that participate in the Children’s Food and Beverage Advertising Initiative fulfilling their individual pledges regarding the use of licensed characters?

The predominant type of pledge offered in this area is that a company will use licensed characters only in advertising for products that meet its nutritional guidelines for defining a healthy food. Compliance for this commitment is essentially a given, based on the previous finding that all participants met their pledge to advertise only products that meet the standards specified by each company’s nutritional

guidelines. To make sense of this, it is important to comprehend the nesting of these two types of pledges.

First, each company pledges to advertise only products that meet its nutritional guidelines. Then each company pledges to use licensed characters solely in advertising for foods that meet its nutritional guidelines. Since we have already confirmed that the first aspect of the pledges addressing the nutritional guidelines was properly fulfilled by all companies, it follows logically that the licensed character commitments must also be fulfilled. Our data corroborate this. When licensed characters are used by self-regulatory participants, the characters appear solely in ads that comply with the company’s nutritional standards.

As was the case with the nutritional guidelines, however, evaluating compliance with the pledges alone does not tell the whole story. Consider the policy goals applicable in this area. In the Institute of Medicine (2006) report, *Food Marketing to Children*, it was recommended that licensed characters be used

TABLE 11

Pledge Company Compliance with Optimal Composite Nutritional Standard for Breakfast Cereals

Parent Company	Product	% of all cereals shown	< 170 Calories	< 30% Calories from fat	< 10% Calories from saturated fat	< 25% Calories from added sugar	< 230 mg Sodium
General Mills	Cookie Crisp	9	+	+	+	-	+
	Trix	8	+	+	+	-	+
	Lucky Charms	7	+	+	+	-	+
	Cinnamon Toast Crunch	7	+	+	+	-	+
	Cocoa Puffs	5	+	+	+	-	+
	Cheerios	4	+	+	+	+	+
	Reese's Puffs	3	+	+	+	-	+
	Honey Nut Cheerios	2	+	+	+	-	+
	Frosted Cheerios	0.5	+	+	+	-	+
Kellogg's	Kellogg's Apple Jacks	10	+	+	+	-	+
	Kellogg's Froot Loops	9	+	+	+	-	+
	Kellogg's Corn Pops Cereal	5	+	+	+	-	+
	Kellogg's Frosted Flakes	4	+	+	+	-	+
	Kellogg's Rice Krispies	4	+	+	+	+	+
	Frosted Mini Wheats	4	-	+	+	+	+
	Kellogg's Cocoa Krispies Cereal Straws	4	+	+	-	-	+
	Kellogg's Froot Loops Cereal Straws	3	+	+	-	-	+
Kraft	Fruity Pebbles	4	+	+	+	-	+
	Cocoa Pebbles	4	+	+	+	-	+
	Honey-comb Cereal	3	+	+	+	-	+

"only for the promotion of foods and beverages that support healthful diets for children and youth" (IOM, 2006, p. 12). Based on this recommendation, it is important for us to assess the use of licensed characters according to the Go-Slow-Whoa nutritional metric. That analysis is presented below, along with a comparison,

over a period of time, which clarifies whether or not the use of licensed characters to promote food products to children has increased or decreased over recent years.

In 2009, six companies participating in the pledge program included licensed characters

in their ads. Listed in order of frequency, these are McDonald's, Kraft, Kellogg, Dannon, Burger King and ConAgra (see Table 12). Across all of their commercials with licensed characters, there was nearly a 50-50 split between products classified as Whoa and products classified as Slow. None of the ads that featured licensed characters promoted a truly healthy Go product.

The finding that roughly half (49.4%) of all ads from self-regulatory participants with licensed characters are devoted to nutritionally poor Whoa products represents a clear violation of the mandate to restrict the use of such figures to market genuinely healthy foods. At the same time, that finding reflects a significant improvement for the industry, as compared to past practice. In 2005, 87.8% of pledge company advertising with licensed characters was devoted to nutritionally poor Whoa products. Thus, the change accomplished since the advent of the self-regulatory program is that the industry has gone from a ratio of 7:8 to a ratio of 4:8 ads that use licensed characters to promote foods of the poorest nutritional quality. Again, while this may represent a step in the desired direction, it comes in the face of a policy recommendation that calls for a ratio of 0:8. Licensed characters should never be used to promote foods of the poorest nutritional quality to children.

Finally, our data indicate the frequency with which licensed characters are used to promote food products to children is on the rise among food companies that participate in the self-regulatory program. Table 13 shows that 15.2% of all food ads from participating companies included a licensed character in 2009. For some companies, a much higher proportion of their overall advertising uses this tactic. For example, Burger King (50.0%), Dannon (47.4%) and McDonald's (43.5%) all are well above the mean. But the key finding in this table is that the use of licensed characters is up from 8.8% of ads by self-regulatory participants in 2005 to 15.2% in 2009. This finding is consistent with the pattern observed in the industry overall, where the levels were up to 15.7% in 2009, as compared to 9.7% in 2005.

In summary, the use of licensed characters to market food products to children is on the rise, and this raises substantial concern given that roughly half of all ads featuring licensed figures

promote non-nutritious food options. Licensed characters are never used to promote truly healthy Go food products, which are good for children and can be consumed in abundance.

Summary of Key Findings

This section addresses the impact of self-regulation. To review, our analysis produced two disparate key findings. The first is that the Children's Food and Beverage Advertising Initiative has fulfilled the "letter of the law" in terms of complying with the promises offered by each participating pledge company. Our data make clear that all 15 companies involved in the initiative at the time this study was conducted met their individual pledges by either (a) not advertising on television to child audiences or (b) advertising only food products that meet nutritional guidelines specified by the parent corporation. Moreover, companies also met their pledge to use licensed characters solely in advertising food products that comply with the parent corporation's guidelines for healthier products, which the self-regulatory program calls "better-for-you" foods.

The second key finding, at odds with the first, is that roughly two-thirds (68.5%) of all foods that comply with company nutritional guidelines established by the self-regulatory initiative are actually classified in the poorest nutritional category, according to the U.S. Department of Health and Human Services. To ensure the point is clear, we underscore the disconnect between these two key findings. The Children's Food and Beverage Advertising Initiative labels all foods that comply with its standards as "better-for-you" and, implicitly, healthy. In contrast, however, roughly two of every three of these pledge-compliant items are classified as Whoa products, which should be consumed "only once in awhile or on special occasions, such as your birthday," according to the U.S. Department of Health and Human Services (2005, p. 14).

Our study also applied a novel analysis identified as the Optimal Composite Nutritional Standard. These guidelines were devised by selecting criteria that best protect child health from among all standards employed by participating pledge companies in devising their own unique nutritional standards for self-regulation. Our findings demonstrate that only a very small minority of food products from

TABLE 12

Pledge Company Use of Licensed Characters, by Nutritional Quality Category

Pledge Company	2009				2005			
	N of Ads	Whoa	Slow	Go	N of Ads	Whoa	Slow	Go
McDonalds	37	8.1%	91.9%	-	3	100%	-	-
Kraft	17	100%	-	-	13	92.3%	7.7%	-
Kellogg's	9	100%	-	-	15	93.3%	6.7%	-
Dannon	9	100%	-	-	-	-	-	-
Burger King	7	-	100%	-	4	75.0%	25.0%	-
ConAgra	2	100%	-	-	-	-	-	-
General Mills	-	-	-	-	3	-	100%	-
Pepsi	-	-	-	-	6	100%	-	-
Nestle	-	-	-	-	5	100%	-	-
Overall	81	49.4%	50.6%	-	49	87.8%	12.2%	-

TABLE 13

Pledge Company Use of Licensed Characters, by Year

Pledge Company	2009		2005	
	N of Ads	% of Ads with Licensed Character	N of Ads	% of Ads with Licensed Character
Kraft	89	19.1%	66	19.7%
McDonalds	85	43.5%	48	6.3%
General Mills	81	-	50	6.0%
Kellogg's	57	15.8%	120	12.5%
Dannon	19	47.4%	8	-
ConAgra	17	11.8%	10	-
Burger King	14	50.0%	12	33.3%
Pepsi	-	-	45	13.3%
Nestle	-	-	24	20.8%
Overall	534	15.2%	557	8.8%

companies participating in self-regulation meet these standards. Only 12% of children's meal products and 8% of cereal products complied with the applicable Optimal Composite Nutritional Standard. The most striking implication of these findings is the lack of consistency in the standards employed to define healthier products across the range of participating companies. Our data show that roughly nine out of every 10 products that meet the nutritional standards adopted by one company violate the standards of one or more of their competitors.

Finally, our study determined that the use of licensed characters in food marketing to children is on the rise. Indeed, the proportion of ads featuring licensed characters from companies that participate in self-regulation has nearly doubled over the past four years, from 8.8% in 2005 to 15.2% in 2009. The finding that raises most concern, however, is that roughly half of all ads from pledge companies that use licensed characters promote foods of the poorest nutritional quality to children. This practice stands squarely in contrast to the recommendation of the Institute of Medicine

(2006) of the National Academies, which called for the food industry to limit all use of licensed characters to products that support healthful diets for children.

The best accomplishment of the industry's program of self-regulation is illuminated by comparisons between companies that participate in the initiative and those that do not. Participating pledge companies devote less of their overall advertising to foods of the poorest nutritional quality (68.5%) than companies that eschew self-regulation (82.9%); similarly, pledge companies devote more of their advertising (31.0%) to moderately healthy foods than non-participating companies (15.1%). Neither group delivers any meaningful amount of advertising for truly healthy food products.

It's important to note that more than one-quarter of all televised food advertising to children (28.7%) originates with companies outside the umbrella of industry self-regulation. This factor, coupled with the finding that most of the products that meet the nutritional guidelines for self-regulation are not in fact considered healthy foods, yields the most compelling finding of the entire study. The marketplace of televised food advertising to children remains dominated by products of the poorest nutritional quality, a pattern that has persisted for decades. While modest gains have been achieved in terms of improving the nutritional quality of foods marketed to children on television, those accomplishments do not begin to approach the goals sought by public health agencies such as the Institute of Medicine.

Conclusion

It has become increasingly clear in recent years that our nation faces a childhood obesity crisis. Both the profound personal costs to victims as well as the economic implications of treatment expenses underscore the need for strong and timely action to reverse this epidemic. Many factors contribute to childhood obesity, and among them are the billions of dollars invested annually by food companies to promote low-nutrient, high-density food products to children. These marketing efforts mean that virtually every child in the nation experiences thousands of exposures annually to

advertising messages intended to persuade young people to consume foods that are not part of a healthy diet (Holt, Ippolito, Desrochers, & Kelley, 2007).

In response to growing public concern, a large segment of the food marketing industry implemented a program of self-regulation intended to improve the nutritional quality of the foods advertised to children. The effort is known as the Children's Food and Beverage Advertising Initiative. This study evaluates the impact of the self-regulatory program by comparing overall levels of nutritional quality in the foods advertised during children's television programs in 2005, before the advent of this initiative, to levels in 2009, when the initiative was in full force.

The data from our study demonstrate that industry self-regulation has achieved only the slightest degree of improvement in televised food marketing to children. Across all television advertising to children, the proportion of foods of the poorest nutritional quality has been reduced from 84% in 2005 to 72.5% in 2009. Meanwhile, advertising to children for truly healthy foods remains virtually invisible, while only modest improvements have been accomplished by increasing the percentage of advertising devoted to moderately nutritious foods, from 12.9% in 2005 to 26.6% in 2009.

This overall outcome is a significant disappointment, given industry self-regulation has been argued by its proponents as an effective alternative to governmental regulation to achieve the dramatic reforms needed in food advertising targeted at our nation's children. As the Institute of Medicine (2006) has noted, the advertising environment contributes significantly to the obesity crisis, as it breeds unhealthy eating habits early on that may last a lifetime, while it also exerts short-term influence on the consumption of products that are unhealthy when consumed in abundance. One of the most simple, yet telling, findings of this study is that, for every one ad for a truly healthy food product that appears on television, a total of 75 other food and beverage commercials are shown, with 55 of these for products that are classified in the poorest nutritional quality category. Reform at this level is clearly insufficient to address the current crisis of childhood obesity. The effort to improve eating habits of our nation's children cannot be successful in a

business-as-usual environment that continues to allow unhealthy food products to predominate in advertising directed to children.

The data in this study illuminate the fundamental limitations of industry self-regulation. In the face of recommendations that the industry discontinue its marketing of non-nutritious foods to children, and emphasize only healthy food offerings in its child-oriented advertising, the Children's Food and Beverage Advertising Initiative embraced "better-for-you" products as the solution. Indeed, most participating companies pledged to advertise only "better-for-you" foods to child audiences. The problem is that the majority of these so-called "better-for-you" foods are not genuinely healthy for children. Despite the fact that a portion of the undesirable ingredients (e.g., fat, sugar, salt) has been removed, the overall nutritional value of most of these offerings remains so low that they are still classified as Whoa products, which should not be consumed on a regular basis.

In conclusion, our evidence distills to two key points: (1) the industry has done everything it promised in terms of fulfilling the details of its self-regulatory pledges and (2) that effort has been completely ineffective in shifting the landscape of food marketing to children away from its overwhelming emphasis on non-nutritious products that place children at risk of becoming obese. With self-regulation fully implemented, nearly three-quarters (72.5%) of all food advertising to children continues to promote low-nutrient, high-density products that are classified in the poorest nutritional category by governmental standards.

This outcome can hardly be said to meet the industry's stated goal of changing the overall landscape of food marketing to children. Moreover, it falls far short of the Institute of Medicine's recommendation that the industry reverse its reliance on marketing low-nutrient, high-density food products to children. At the present pace of industry reform—a reduction of roughly 12% in the proportion of child-oriented food ads for Whoa products over four years' time—it would take until the year 2017 for moderately healthy Slow food products and truly healthy Go products to outnumber the advertisements for nutritionally poor Whoa products that children see. Worse still, it would take until the year 2033 to end child-

targeted advertising for nutritionally poor Whoa products entirely, and that prediction presumes that the current pace of reform observed by this study would be maintained over the next quarter of a century, which is hardly a safe bet.

Given this evidence, public health officials and policymakers need to seriously consider regulatory intervention to achieve more stringent reductions in the advertising of nutritionally deficient food products to children. As noted previously, the Institute of Medicine (2006) has recommended that Congress should intervene and adopt legislation to ensure that food marketers emphasize healthful food and beverage products in their child-oriented advertising, if the industry failed to achieve this outcome through its voluntary efforts. The data from our study could not provide a clearer verdict documenting the failure of self-regulation, an outcome that some have already predicted (Brownell & Warner, 2009). In the face of pleas for significant reform, the industry has accomplished what might generously be labeled as baby steps. With the current childhood obesity crisis approaching the number one threat to our nation's public health, it is clear that the failure to act strongly and swiftly holds serious adverse implications for generations of America's children. Bold strides, rather than tiny steps, will be required to reverse the longstanding predominance of unhealthy food products in the children's advertising environment.

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Appendix A

The U.S. Department of Health and Human Services'
Go-Slow-Whoa Food Rating System Example Chart

Food Group	GO (Almost Anytime Foods)	SLOW (Sometimes Foods)	WHOA (Once in a While Foods)
Nutrient-Dense ←————→ Calorie-Dense			
Vegetables	Almost all fresh, frozen, and canned vegetables without added fat and sauces	All vegetables with added fat and sauces; oven-baked French fries; avocado	Fried potatoes, like French fries or hash browns; other deep-fried vegetables
Fruits	All fresh, frozen, canned in juice	100 percent fruit juice; fruits canned in light syrup; dried fruits	Fruits canned in heavy syrup
Breads and Cereals	Whole-grain breads, including pita bread; tortillas and whole-grain pasta; brown rice; hot and cold unsweetened whole-grain breakfast cereals	White refined flour bread, rice, and pasta. French toast; taco shells; cornbread; biscuits; granola; waffles and pancakes	Croissants; muffins; doughnuts; sweet rolls; crackers made with trans fats; sweetened breakfast cereals
Milk and Milk Products	Fat-free or 1 percent low-fat milk; fat-free or low-fat yogurt; part-skim, reduced fat, and fat-free cheese; low-fat or fat-free cottage cheese	2 percent low-fat milk; processed cheese spread	Whole milk; full-fat American, cheddar, Colby, Swiss, cream cheese; whole-milk yogurt
Meats, Poultry, Fish, Eggs, Beans, and Nuts	Trimmed beef and pork; extra lean ground beef; chicken and turkey without skin; tuna canned in water; baked, broiled, steamed, grilled fish and shellfish; beans, split peas, lentils, tofu; egg whites and egg substitutes	Lean ground beef, broiled hamburgers; ham, Canadian bacon; chicken and turkey with skin; low-fat hot dogs; tuna canned in oil; peanut butter; nuts; whole eggs cooked without added fat	Untrimmed beef and pork; regular ground beef; fried hamburgers; ribs; bacon; fried chicken, chicken nuggets; hot dogs, lunch meats, pepperoni, sausage; fried fish and shellfish; whole eggs cooked with fat
Sweets and Snacks*		Ice milk bars; frozen fruit juice bars; low-fat or fat-free frozen yogurt and ice cream; fig bars, ginger snaps, baked chips; low-fat microwave popcorn; pretzels	Cookies and cakes; pies; cheese cake; ice cream; chocolate; candy; chips; buttered microwave popcorn
Fats/Condiments	Vinegar; ketchup; mustard; fat-free creamy salad dressing; fat-free mayonnaise; fat free sour cream	Vegetable oil, olive oil, and oil-based salad dressing; soft margarine; low-fat creamy salad dressing; low-fat mayonnaise; low-fat sour cream**	Butter, stick margarine; lard; salt pork; gravy; regular creamy salad dressing; mayonnaise; tartar sauce; sour cream; cheese sauce; cream sauce; cream cheese dips
Beverages	Water, fat-free milk, or 1 percent low-fat milk; diet soda; unsweetened ice tea or diet iced tea and lemonade	2 percent low-fat milk; 100 percent fruit juice; sports drinks	Whole milk; regular soda; calorically sweetened iced teas and lemonade; fruit drinks with less than 100 percent fruit juice

*Though some of the foods in this row are lower in fat and calories, all sweets and snacks need to be limited so as not to exceed one's daily calorie requirements.

**Vegetable and olive oils contain no saturated or trans fats and can be consumed daily, but in limited portions, to meet daily calorie needs.

Children Now is a nonpartisan research and advocacy organization working to raise children's well-being to the top of the national policy agenda. The organization focuses on ensuring quality health care, a solid education and a positive media environment for all children. Children Now's strategic approach creates awareness of children's needs, develops effective policy solutions and engages those who can make change happen.

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