

Industry Progress to Market a Healthful Diet to American Children and Adolescents

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Context: The IOM released an expert committee report in 2005 that assessed the nature, extent, and influence of food and beverage marketing practices on the diets and health of American children and adolescents. The report concluded that prevailing marketing practices did not support a healthful diet and offered recommendations for diverse stakeholders to promote a healthful diet. The investigators evaluated progress made by food, beverage, and restaurant companies; trade associations; entertainment companies; and the media to achieve the IOM report recommendations over 5 years.

Evidence acquisition: A literature review was conducted of electronic databases and relevant government, industry, and media websites between December 1, 2005, and January 31, 2011. Evidence selection was guided by the IOM LEAD principles (i.e., *locate, evaluate, and assemble* evidence to inform *decisions*) and five qualitative-research criteria, and it was validated by data and investigator triangulation. The investigators selected and categorized 117 data sources into two evidence tables used to evaluate industry progress (i.e., no, limited, moderate, and extensive).

Evidence synthesis: Food and beverage companies made moderate progress; however, limited progress was made by other industry subsectors. Industry stakeholders used integrated marketing communications (IMC) to promote primarily unhealthy products, which threaten children's and adolescents' health and miss opportunities to promote a healthy eating environment.

Conclusions: Diverse industry stakeholders have several untapped opportunities to advance progress by promoting IMC to support a healthful diet; substantially strengthening self-regulatory programs; supporting truthful and non-misleading product labeling and health claims; engaging in partnerships; and funding independent evaluations of collective efforts.

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Context

Food and beverage marketing to children and adolescents is a complex, contentious, and rapidly evolving issue linked to the U.S. overweight and obesity crisis that affects one third (32%) of American children and adolescents, aged 2–19 years.^{1,2} In 2004, Congress directed the IOM of the National Academies to convene an expert committee to review the evidence for

food and beverage marketing practices that influence the diets of children and adolescents and recommend strategies to promote a healthful diet. In December 2005, the IOM released an expert committee report, *Food Marketing to Children and Youth: Threat or Opportunity?*³ which assessed the nature, extent, and influence of food and beverage marketing on the diets and health of American children and adolescents.

The IOM committee documented that most American children and adolescents have inadequate intakes of nutrient-dense food groups (i.e., fruits, vegetables, whole grains, and low-fat dairy) and consume lower than recommended levels of shortfall nutrients (i.e., potassium, fiber, and calcium).³ Young people also have excessive intakes of energy-dense foods and beverages and consume higher than recommended levels of nutrients of concern (i.e., sodium, added sugars, total calories, total fat, and saturated fat). Recent

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analyses have confirmed these troubling dietary trends.⁴⁻⁹

The IOM committee conducted a systematic literature review and found that TV advertising influenced children's preferences and purchase requests, diets, and health. The committee's findings were limited to TV advertising because of knowledge gaps and lack of access to proprietary information about newer forms of integrated marketing communications (IMC), whereby companies combine advertising, public relations, sales promotion, direct marketing, sponsorships, and point-of-purchase with many communication techniques to provide clarity, consistency, and maximum impact to reach customers.^{10,11}

The IOM committee³ also found that leading food and beverage companies spent substantial resources to market branded food and beverage products to young people that do not support a healthful diet. These findings were confirmed by the Federal Trade Commission (FTC).¹² According to the 2006 marketing expenditures of 44 food, beverage, and restaurant companies, more than \$1.6 billion were spent to market primarily unhealthy products to children and adolescents, of which \$870 million were spent to market to children aged <12 years and more than \$1 billion were spent to market to adolescents.¹²

The IOM committee concluded that food and beverage marketing influences the diets and health of children and adolescents; current marketing practices are out of balance with a healthful diet and create an environment that puts young people's health at risk; companies and marketers have underutilized their potential to apply resources and creativity to market a healthful diet; achieving a healthful diet will require industry leadership and sustained, multisectoral, and integrated efforts; and current public policy lacks support or authority to address emerging marketing practices that influence diets.

The IOM report offered 10 recommendations to guide diverse private- and public-sector stakeholders to promote a healthful diet to children and adolescents. The first five recommendations focus on industry stakeholders including food, beverage, and restaurant companies; industry trade associations; food retailers; entertainment companies; and the media.

A companion paper will address public-sector stakeholder progress. This paper reviews the available evidence between December 1, 2005, and January 31, 2011, to evaluate industry stakeholders' progress to market a healthful diet to children and adolescents. The results are discussed within the context of potential opportunities

and actions industry stakeholders might pursue to advance progress toward the IOM food marketing report recommendations.

Evidence Acquisition

Table 1 summarizes the methods used to evaluate industry progress. The investigators (1) established the evidence selection approach, criteria, and search strategy, including search terms; (2) conducted a literature review between December 1, 2005, and January 31, 2011, of electronic databases, federal government agency websites, company and industry websites, gray-literature studies and reports, and media stories or news releases; (3) selected and categorized 117 evidence sources ($n=47$ published articles and reports and $n=70$ media stories or news releases) into two evidence tables; (4) independently reviewed the evidence for the major IOM recommendations and subrecommendations before assigning an evaluation category, and reached consensus on the progress evaluation category (i.e., no, limited, moderate, and extensive) for stakeholder groups in a specific sector pertinent to each recommendation; and (5) identified opportunities and potential actions that industry stakeholders could take to accelerate progress toward the IOM food marketing recommendations based on the evidence table, other expert committee reports, and grounded in the evolving policy developments for each area explored.

To guide the evidence selection and interpretation, the investigators used principles developed by a separate IOM expert committee in 2010,¹³ based on an obesity-prevention decision-making framework to locate, evaluate, and assemble evidence to inform decisions (LEAD). The LEAD principles were developed for decisionmakers to use a systems perspective to identify the type of evidence required to answer specific public health questions when evidence is limited but actions must be taken. The LEAD approach combines available evidence with theory, professional experience, and local wisdom to inform decision making and integrates scientific evidence into broader factors that influence obesity-prevention policies.¹³ The investigators selected the LEAD approach because it was appropriate to the research task to use all available evidence to inform policy. Food marketing to young people is a complex issue requiring diverse evidence from broad areas to evaluate overall progress over time made by multiple stakeholders to market a healthful diet to children and adolescents.

The investigators used five accepted qualitative-research criteria¹⁴ (i.e., data relevance, research-design

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Table 1. Methodologic approach used to evaluate industry progress

I. Investigators used the IOM LEAD principles (i.e., locate, evaluate, and assemble evidence to inform decisions) to establish evidence selection approach, criteria, and search strategy	
Five qualitative-research criteria (i.e., data relevance, research-design quality, professional judgment, contextual analysis, and credibility by data verification)	
Search terms (i.e., <i>child, children, adolescents, food advertising, food marketing, beverage advertising, health, wellness, obesity, overweight, food retail, restaurant, fast food, media, entertainment, product reformulation, labeling, nutrient profiling, health claim, nutrient claim, advertising, marketing, industry self-regulation, licensed character, and partnership</i>)	
Triangulation (i.e., data and investigator) to identify convergence of evidence	
II. LOCATE: Investigators conducted a literature review between December 1, 2005, and January 31, 2011	
Electronic databases (i.e., MEDLINE, Science Direct, LexisNexis, Library of Congress, Business Source Premier and Mergent)	
U.S. federal government agency websites (i.e., DHHS, CDC, Department of Education, Federal Communications Commission, Food and Drug Administration, Federal Trade Commission, NIH, U.S. Department of Agriculture, and the Office of the White House Press Secretary)	
Websites of food, beverage, restaurant, and entertainment companies and industry trade associations	
Studies and reports released by industry, government, nonprofit organization, foundations, and academic institutions	
Media stories, press and news releases	
III. EVALUATE and ASSEMBLE: Investigators selected and categorized 117 evidence sources (n=47 published articles or reports and n=70 media stories, press or news releases) into two evidence tables that contained the following information:	
Primary author, year, and reference number	
Study design or report description (i.e., government, industry, foundation, nongovernment organization, peer-reviewed journal article, and expert committee report), or media story, press or news release description	
Major findings	
All of the available evidence was considered before one of four evaluation categories was selected (i.e., no, limited, moderate, and extensive) for stakeholders within a specific sector pertinent to each IOM recommendation, drawing from these criteria:	
Stakeholder transparency, accountability, cooperation, and collaboration within and across sectors with other groups (e.g., government and public health advocates), consistency of actions, establishing and implementing meaningful goals and benchmarks, and voluntary reporting on progress to promote a healthful diet to children and adolescents	
IV. INFORM DECISIONS: Investigators identified opportunities and potential actions that industry stakeholders could take to advance progress toward the IOM food marketing recommendations	
Proposed actions are grounded in the evidence tables, the evolving policy developments for each relevant area, and supported by other expert committee and advisory group reports	

quality, professional judgment, contextual analysis, and credibility by data verification) and data and investigator triangulation to validate evidence convergence.^{15,16} The search terms were selected after reviewing the existing food and beverage marketing literature (Table 1). The initial search yielded hundreds of documents. The investigators repeated and refined subsequent searches according to specific evaluations that pertained to the IOM recommendations for each industry sector examined.

Appendix A (available online at www.ajpmonline.org) summarizes the study designs, report descriptions, and findings for 47 evidence sources. Appendix B (available online at www.ajpmonline.org) lists 70 media stories, press, or news releases used for the evaluation.

Figure 1 provides the recommendations for industry stakeholders, specific action domains, and a progress evaluation for each industry sector. The investigators convened to discuss opportunities and actions that in-

dustry decision makers might take to accelerate progress toward the IOM committee’s recommendations. Figure 1 highlights potential opportunities and actions that are grounded in the evidence tables, the evolving policy developments for each area, and supported by other expert committee and advisory group reports. The results are presented in a narrative summary.

Evidence Synthesis

The evaluation showed that extensive progress was not made by any industry stakeholder to achieve the IOM recommendations (Figure 1). Moderate progress was made by food and beverage companies and industry, in cooperation with public-sector groups, to improve marketing practice standards; and limited progress was made by restaurants, industry trade associations, entertainment companies, and the media over the 5-year period reviewed.






STAKEHOLDERS	ACTION DOMAINS	PROGRESS *	SUGGESTED ACTIONS
1. FOOD & BEVERAGE COMPANIES 	ALL AREAS <ul style="list-style-type: none"> • Product development and reformulation • Advertising and marketing • Product labeling and health claims • Engage all marketing vehicles and venues 	MODERATE	<ul style="list-style-type: none"> • Expand healthier food and beverage products • Strengthen and support industry self-regulatory programs • Improve product labeling and use truthful and non-misleading health claims to promote healthy food and beverage products • Encourage partnerships to promote a healthful diet • Support evaluations of collective efforts to promote a healthful diet
2. RESTAURANTS 	ALL AREAS <ul style="list-style-type: none"> • Expand healthier choices • Prominent menu labeling 	LIMITED	<ul style="list-style-type: none"> • Join and support industry self-regulatory programs • Establish healthy meal standards and healthy default choices • Use competitive pricing strategically to promote healthy options • Offer toys and incentives only with healthy food, beverage and meal products • Promote clear menu labeling • Encourage partnerships to promote a healthful diet • Support evaluations of collective efforts to promote a healthful diet
3. INDUSTRY TRADE ASSOCIATIONS 	ALL AREAS <ul style="list-style-type: none"> • Support members to develop and adopt industry-wide food and beverage marketing practice standards • Provide technical assistance to members • Collaborate with public-sector initiatives 	LIMITED	<ul style="list-style-type: none"> • Develop a competitive framework for members to promote a healthful diet • Provide technical assistance to members to adhere to government nutrition standards for marketing to children and adolescents • Incentivize grocery stores and food retailers to promote healthy options • Evaluate the 2006 school snack food agreement • Work with the FDA to develop and adopt industry-wide food and beverage front-of-package labeling • Encourage partnerships to promote a healthful diet • Support evaluations of collective efforts to promote a healthful diet
4. MARKETING PRACTICE STANDARDS 	ALL AREAS <ul style="list-style-type: none"> • Expand, enforce and evaluate industry self-regulatory guidelines beyond advertising • Use of licensed characters • Cooperate with the FTC and CARU to evaluate and enforce the expanded guidelines 	MODERATE	<ul style="list-style-type: none"> • Expand and promote healthy products through integrated marketing communications (IMC) • Collaborate with public-sector stakeholders and the IWG to strengthen and support the CFBAI beyond advertising and expand pledges to adolescents • Use licensed characters only for healthy food and beverage product promotion • Cooperate with the the FTC, CBBB, CARU and CFBAI to evaluate and enforce the expanded guidelines
5. MEDIA & ENTERTAINMENT COMPANIES 	ALL AREAS <ul style="list-style-type: none"> • Use multiple media platforms to promote storylines and messages that support a healthful diet • Media serve as accurate interpreters and reporters to the public 	LIMITED	<ul style="list-style-type: none"> • Join and support industry self-regulatory programs • Use licensed characters only for healthy product promotion • Media accurately report and interpret press stories to the public • Encourage partnerships to promote a healthful diet • Support evaluations of collective efforts to promote a healthful diet

Figure 1. Potential opportunities and actions for industry stakeholders to promote a healthful diet to American children and adolescents

Note: Based on the IOM private-sector recommendations

ABA, American Beverage Association; CARU, Children’s Advertising Review Unit; CBBB, Council of the Better Business Bureaus, Inc.; CFBAI, Children’s Food and Beverage Advertising Initiative; FMI, Food Marketing Institute; FDA, Food and Drug Administration; FTC, Federal Trade Commission; GMA, Grocery Manufacturers Association; IMC, Integrated Marketing Communications; IWG, Federal Interagency Working Group on Marketing to Children (i.e., CDC, FDA, FTC, USDA); NRA, National Restaurant Association; SFA, Snack Food Association

Food and Beverage Companies—Moderate Progress Achieved

Industry reports suggest that progress was made to reformulate and expand healthier products¹⁷⁻²⁴; reduce TV advertising for unhealthy products (i.e., sweet snacks and sugar-sweetened beverages [SSBs])^{21-23,25} that was supported by two independent evaluations^{26,27}; develop front-of-package (FOP) labeling for consumers to identify healthy products^{28,29}; and initiate partnerships to promote a healthful diet and healthy lifestyles.^{30,31}

In 2006, the Council of the Better Business Bureaus (CBBB) and National Advertising Review Council announced revisions to strengthen the Children's Advertising Review Unit's (CARU's) self-regulatory guidelines and released the Children's Food and Beverage Advertising Initiative (CFBAI).³² The CFBAI became operational with ten food companies in July 2007.²¹

By September 2010, 17 companies (15 food and beverage companies and two restaurant companies) participated in the CFBAI and voluntarily pledged to shift the child-directed advertising messages to encourage healthier dietary choices and healthy lifestyles.³³

Three CFBAI monitoring reports were released at 6, 12, and 24 months (2008-2010)²¹⁻²³ that documented high compliance with company pledges for child-directed advertising. The CFBAI guidelines were strengthened and revised in 2009 and 2010.³⁴⁻³⁶ Several food and beverage companies promote healthy lifestyles through public-private partnerships with industry coalitions, such as the Healthy Weight Commitment Foundation (HWCF),^{30,37} and the Partnership for a Healthier America (PHA).³⁸

The investigators' progress evaluation found that despite positive actions reported, product reformulations showed only incremental changes to meet healthier nutrient profiles³⁹⁻⁴¹; companies continued to advertise and market unhealthy foods and beverages to young people^{12,42-44} compared to pre-December 2005 marketing trends⁴⁵⁻⁵¹; companies used misleading advertising and health claims to promote children's products⁵²⁻⁵⁴ and the FTC and CARU investigated certain claims⁵⁵⁻⁵⁷; and FOP labeling symbols and nutrient-profiling systems were based on different criteria that hindered consumers' selection of healthy products in grocery stores.^{28,58} Company pledges failed to protect children aged <12 years and adolescents, aged 12-17 years, from all types of marketing practices promoting unhealthy products⁵⁹⁻⁶²; nonparticipating CFBAI companies were more likely to market unhealthy products⁶¹; and public-private partnerships should be evaluated for effectiveness.⁶³

Restaurants—Limited Progress Achieved

Full-service and quick-serve chain restaurants (QSRs) made limited progress to expand and promote healthier meals and provide calories and other nutrition information at point of choice and consumption. A 2006 Keystone Center advisory committee (with industry representatives) reinforced the IOM food marketing report recommendations for restaurants to expand healthier options, reduce portion sizes, and promote menu labeling^{64,65}; however, restaurants failed to act, as revealed by two studies in 2008-2009 that documented that less than 10% of children's restaurant meals met healthful criteria consistent with the Dietary Guidelines for Americans (DGA).^{66,67}

In 2010, the Rudd Center released a study examining children's and adolescents' meal choices at 12 leading QSR chains.⁶⁸ The study documented that only 12 of 3039 children's meal combinations met established nutrition criteria for preschoolers; only 15 meals met nutrition criteria for older children; meals purchased by adolescents provided an average of 800-1100 calories/meal, representing half of their recommended daily calories; and meals sold to young people rarely offered healthy side dishes as the default choice.⁶⁸

Although some restaurants reported expanding healthier children's meal options,²¹⁻²³ changes made suggested an industry strategy to respond to negative public relations generated by advocacy groups disclosing that most restaurant meals exceeded young children's recommended daily calories (480 calories/meal, representing one third of the recommended 1300 calories/day for young children)⁶⁹ and adolescents' recommended daily calories (733 calories/meal, representing one third of the recommended 2200 calories/meal for adolescents).⁷⁰ Meals also exceeded recommendations for sodium, fat, and added sugars⁶⁶⁻⁶⁸ that contributed to poor diet quality. Two studies suggested that mandatory menu labeling may help parents make healthier choices for their children.^{71,72}

Only Subway and Walt Disney restaurants have designated healthy default choices (i.e., fruits, nonstarchy vegetables, and low-fat or fat-free milk) as the preferred side dishes and beverages, respectively, accompanying children's meals instead of high-calorie, low-nutrient options (i.e., french fries and SSBs).^{66,68,73} McDonald's and Burger King are the only two restaurants participating in the CFBAI.²¹⁻²³ Several other leading QSR restaurants, including YUM! Brands (the parent company for KFC, Taco Bell, and Pizza Hut) and Subway, have not joined the CFBAI.

The QSR sector spent more than \$4.2 billion in 2009 on marketing to young people and adults through TV, digital, mobile, and social media.⁶⁸ From 2003 through 2009,

exposure to QSR chain TV advertisements increased by 21% for preschoolers; 34% for children (aged 2–11 years); and 39% for adolescents (aged 12–17 years).^{26,68} African-American children and adolescents, who are disproportionately affected by higher overweight and obesity rates, were targeted more aggressively by QSR chain restaurant TV advertisements during this period.^{26,68,74}

A 2010 evaluation documented that only 24% of 42 restaurants had marketing policies for children and had complied with the FTC's recommendation to standardize nutrition criteria for marketing to children.⁶² No evidence showed that restaurants had used competitive pricing to encourage healthy meals, and QSR restaurants failed to provide nutrition guidelines for meals when offering toys to children.^{75,76} McDonald's opposed health advocates in California's Santa Clara County⁷⁷ and San Francisco⁷⁸ to legally mandate specific nutrition standards when distributing toys or incentives with children's meals. Although McDonald's defended its Happy Meals,⁷⁹ the company reportedly reformulated children's meals and posted the updated information on a public website⁸⁰ after being threatened with a consumer advocacy-group lawsuit⁸¹ formally initiated in December 2010.⁸²

Restaurants have not joined public-private partnerships such as the HWCF and the PHA to promote a healthful diet. The restaurant leadership inadequacies were noted by First Lady Michelle Obama, who encouraged the sector to substantially improve meals for American children and families and their involvement in the *Let's Move!* initiative.⁸³

Industry Trade Associations—Limited Progress Achieved

Industry trade associations collectively made limited progress to demonstrate leadership and harness industry creativity, support, and resources to market a healthful diet. Trade associations representing the food, beverage, food retail, and fresh produce industry demonstrated certain positive actions during the period reviewed.^{25,84–90} Very limited progress was made by trade associations representing advertisers and marketers,^{91,92} restaurants,⁹³ and the confection⁹⁴ and snack-food⁹⁵ sectors. No evidence showed that the 2006 school snack-food agreement⁹⁶ had been evaluated. Unhealthy food and beverage products were widely available to children through food retailers.^{97,98} Nevertheless, Wal-Mart announced encouraging steps in early 2011 to expand healthier options.⁹⁹ Only three trade associations are members or partners of the HWCF.³⁷

This evaluation accounted for delayed industry trade actions—which appeared to improve in February 2010 after *Let's Move!* was initiated¹⁰⁰ and in May 2010 after

the release of the White House Task Force Report on Childhood Obesity¹⁰¹—and lobbying actions that undermined public health goals. The National Restaurant Association (NRA) neither publicly encouraged members to join the CFBAI nor provided technical support to promote clear advertising policies to children that aligned with healthy criteria. NRA also failed to support menu labeling until it became apparent that it would be enacted into law through healthcare reform legislation in March 2010.¹⁰² Two advertising trade associations continue to defend their right to advertise to children.^{91,92} The National Confectioners Association viewed the Child Nutrition Program Reauthorization legislation as a threat because of proposed limits on candy sales in school vending machines.⁹⁴ These trade associations did not make position papers or policies publicly available to support marketing a healthful diet.

The Grocery Manufacturers Association's (GMA's) positive actions were evaluated within the context of spending \$1.6 million and the NRA spending \$1.4 million, respectively, to lobby legislators to oppose an SSB tax in 2009.¹⁰³ In late 2010 and early 2011, GMA and the Food Marketing Institute (FMI) announced that they had developed their own FOP nutrition labeling system called "Nutrition Keys" and pledged a \$50 million education campaign to provide American consumers with an easy-to-use format providing calories, saturated fat, sodium, and added sugars.^{104–106} This strategy was developed without FDA input¹⁰⁷ and preempted a forthcoming IOM report based on consumers' understanding of FOP systems. The industry initiative could confuse consumers unless it is spearheaded by the Food and Drug Administration (FDA) and informed by IOM recommendations.²⁸

Marketing Practice Standards—Moderate Progress Achieved

Industry stakeholders made moderate progress to work with government and other groups to establish and enforce marketing standards for young people. By 2010, a total of 17 companies, representing about two thirds of the industry marketing expenditures for children and adolescents, voluntarily participated in the CFBAI and reported progress in revising, applying, and evaluating their advertising standards.^{23,33,36,108–110} Although, many marketing practices and marketing to adolescents were excluded from companies' pledges.

Government made moderate progress to evaluate companies' compliance. The FTC released three reports between 2006 and 2008—one with the DHHS acknowledging some positive company actions¹⁷; an analysis of young people's TV advertising exposure between 1977 and 2004 that showed a majority of advertisements pro-

moted unhealthy foods to children aged 2–11 years through prime-time TV and other programming¹¹¹; and a report documenting that more than \$1.6 billion was spent in 2006 to market primarily unhealthy food and beverage products to young people.¹²

A 2008 Senate hearing¹¹² and the FTC¹² urged companies to adopt meaningful, uniform nutrition standards for all products marketed to children, and develop pledges beyond child-directed advertising that would apply to all forms of marketing, including *measured media* spending (representing media categories that companies use to promote products systematically tracked by media research companies) and *unmeasured media* spending (representing sales promotions, coupons, and Internet-based marketing that are not systematically tracked).^{3,12} No company has yet complied fully with the FTC recommendations.

A 2006 Federal Communications Commission (FCC) Task Force was unable to reach consensus on nutrition standards and media marketing by 2008.¹¹³ In 2009, concern about the limited effectiveness of industry self-regulation prompted Congress to direct the federal government to convene an Interagency Working Group (IWG) on Marketing to Children with representatives from the CDC, FDA, FTC, and U.S. Department of Agriculture (USDA) to conduct a study and develop recommendations to establish food marketing standards for promotional practices targeting children and adolescents.¹¹⁴

Congress requested the IWG to submit its report and recommendations by July 15, 2010. Although tentative draft nutrition standards were released by the federal IWG at an FTC meeting in December 2009,¹¹⁵ delays in posting to elicit public input prevented the IWG from meeting the July 15, 2010, congressional deadline.¹¹⁶ In September 2010, the FTC delivered subpoenas to 48 food and beverage manufacturers, distributors, and QSRs to obtain information to review changes in industry expenditures and marketing activities from 2006 to 2009 and to assess the effectiveness of industry's voluntary actions over this period¹¹⁷ for a follow-up report to be released in 2011.¹¹⁸

This progress evaluation noted several industry inadequacies to improve marketing practices that protect children and adolescents. First, most companies have not extended self-regulatory pledges to cover broader forms of child-directed marketing, such as product packaging and in-store marketing. The pledges of most companies do not cover all forms of spending on "new media" (i.e., digital, mobile, and interactive social media) that are less expensive and highly engaging to maximize young people's exposure to marketing messages for unhealthy products more effectively when compared to

traditional forms of advertising.¹¹⁹ The pledges of most companies also do not cover all school-based marketing practices (i.e., fundraisers, sponsorship, in-school celebrations, label-redemption programs, products donated as contributions-in-kind, and cause marketing).^{120–123}

Second, companies have not extended pledges to cover advertising and marketing practices that promote unhealthy food and beverage products targeted to adolescents.¹¹⁹ Third, each CFBAI member's pledge is based on its own selective nutrition standards rather than a universal set of evidence-based nutrition standards.⁶² Fourth, although a reduction in third-party licensed characters used to promote products to young children was observed, companies are using other forms of cross-promotion marketing.¹²³ Nearly half (49.4%) of company advertisements use licensed characters to promote unhealthy products,⁶¹ which is important because children prefer foods with licensed characters, especially for energy-dense foods (candy) compared to healthier options (baby carrots).¹²⁴

Media and Entertainment Companies—Limited Progress Achieved

The media and entertainment industry made limited progress during the period reviewed. At a 2008 Senate hearing,¹¹³ the FCC Chairman expressed concern that few media companies had voluntarily limited advertisements targeting children.¹²⁴ A 2010 evaluation showed that only one quarter of entertainment companies had a clear policy on food marketing to children. Existing policies addressed third-party licensed characters but were weaker for products marketed through broadcast, print, and digital media and product placement.⁶² Only Walt Disney and Sesame Workshop reported limiting child-directed marketing to products meeting specific nutrition standards. The Cartoon Network developed policies for licensed characters but lacked policies for other promotional activities. Nickelodeon neither had nutrition standards nor a clear policy about food marketing to children^{62,125,126} despite earlier public commitments to implement policies.^{17,127}

One evaluation found that the percentage of advertisements for high-calorie and low-nutrient foods aired by entertainment companies decreased only slightly between 2005 and 2009 (before and after the CFBAI was implemented) from about nine in ten (88%) to eight in ten (79%) food advertisements.⁶¹ No children's entertainment companies currently participate in the CFBAI or HWCF. Entertainment companies' brand-equity characters are exempted from the updated 2010 CFBAI principles that encouraged member companies to limit third-party licensed characters to advertise only products that

promote a healthful diet or healthy lifestyles. CFBAI pledges exclude licensed characters on product packaging because most companies do not consider this promotion activity to represent advertising.⁴⁰

The media shape the public's opinions about obesity, diet, and health by emphasizing feature stories and articles about the causes of unhealthy diets, affected groups, and stakeholders responsible for an effective response. Trends in media coverage of obesity-related stories showed a steady increase during the period reviewed¹²⁸ but the specific content and accuracy of these stories are unknown. In 2009, a report examining U.S. healthcare journalism found that financial pressures on the media industry and competition to break news on innovative and expanding Internet-based media platforms influence and affect the quality of health reporting. These challenges have caused journalists specializing in healthcare coverage to be concerned about the lack of in-depth, detailed reporting and the influence of public relations and advertising on news content and consumers' perceptions of media stories.¹²⁹

Discussion

Eating behaviors of children and adolescents are highly complex because they are influenced by the interplay of many factors across different contexts to potentially create healthy food and eating environments.¹³⁰ Marketing to young people is equally complicated because it involves diverse stakeholders with different motivations and priorities that interact over time. The IOM committee identified food marketing to children and adolescents as a current threat to young people's diets and health but also viewed marketing as potentially providing opportunities to improve young people's future diet and health.³

A subsequent 2007 IOM obesity prevention progress report¹³¹ acknowledged the tensions among private- and public-sector stakeholders to promote a healthful diet to children and adolescents, with special consideration for the following issues: conveying consistent and appealing messages; ensuring transparency by sharing relevant marketing data; obtaining company-wide commitments; understanding the interactions among companies, marketing practices, and consumer demand; balancing free-market system goals with protecting young people's health; and committing to monitor and evaluate all efforts.

Industry decision makers and policymakers have many opportunities to accelerate progress toward the IOM food marketing committee's recommendations and to create healthy eating environments by using a new infrastructure that has evolved since the 2006 IOM food marketing report release. The infrastructure includes in-

dustry self-regulatory mechanisms (i.e., CBBB, CARU, and CFBAI); public-private partnerships; independent monitoring and evaluations undertaken by academic and advocacy groups; and federal government initiatives, including the IWG on Food Marketing to Children,¹³² FTC studies,^{116,117} FDA leadership on FOP labeling,¹³³ and the HHS and USDA release of the DGA 2010.¹³⁴

This evaluation found that moderate progress was made by food and beverage companies and diverse groups to strengthen marketing practice standards. However, restaurants, industry trade associations, entertainment companies, and the media made limited progress. Industry stakeholders used IMC to market primarily unhealthy products that threaten children's and adolescents' health and miss opportunities to promote healthy eating environments. In July 2011, the CBBB and CFBAI announced a promising agreement reached with participating companies to follow uniform nutrition criteria for foods advertised to children. The new criteria will encourage companies to reformulate and develop new products with less sodium, saturated fat and sugars, and fewer calories; otherwise they will not advertise them after December 31, 2013.¹³⁵ There are many other opportunities and actions that industry stakeholders could take to accelerate progress. Proposed actions are grounded in the evidence reviewed for this progress evaluation, and recommended by other expert committees and advisory groups (Figure 1).^{6,12,17,27,28,64,101,117,131–134}

Conclusion

The IOM recommendations provide a coherent framework to ensure that a nexus of coordinated actions are implemented to promote a healthful diet to young people. This paper used the IOM LEAD approach to evaluate progress made by industry stakeholders to achieve the IOM food marketing report recommendations for marketing a healthful diet to children and adolescents. The results can inform potential actions that decision makers might take to promote healthy products, a healthful diet, and healthy food and eating environments.

A companion paper will address public-sector stakeholder progress. Moderate progress was made by food and beverage companies and diverse private- and public-sector stakeholders to improve marketing practice standards. Limited progress was made by restaurants, industry trade associations, and entertainment companies and the media to market a healthful diet. Diverse industry stakeholders have many untapped opportunities to advance progress by collectively promoting IMC for healthy food, beverages, and meals; substantially strengthening self-regulatory programs; supporting clear, truthful, and non-misleading product labeling and health claims; en-

gaging in public-private partnerships; and funding independent evaluations of collective efforts.

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References

- Ogden CL, Carroll MD, Curtin LR, Lamb MM, Flegal KM. Prevalence of high body mass index in U.S. children and adolescents, 2007-2008. *J Am Med Assoc* 2010;303(3):242-49. jama.ama-assn.org/cgi/reprint/303/3/242.
- Ogden CL, Carroll MD, Flegal KM. High body mass index for age among U.S. children and adolescents, 2003-2006. *J Am Med Assoc* 2008;299(20):2401-5. jama.ama-assn.org/cgi/reprint/299/20/2401.
- McGinnis JM, Gootman JA, Kraak VI, editors; Committee on Food Marketing and the Diets of Children and Youth; Institute of Medicine. *Food marketing to children and youth: threat or opportunity?* Washington DC: The National Academies Press, 2006.
- Spear BA, Barlow SE, Ervin C, et al. Recommendations for treatment of child and adolescent overweight and obesity. *Pediatrics* 2007; 120(4S):S254-88. [Pediatrics.aappublications.org/cgi/reprint/120/Supplement_4/S254](http://pediatrics.aappublications.org/cgi/reprint/120/Supplement_4/S254).
- Stallings VA, Taylor CL, editors. *Committee on Nutrition Standards for National School Lunch and Breakfast Programs; National Research Council. Nutrition standards and meal requirements for national school lunch and breakfast programs: phase I. Proposed approach for recommending revisions.* Washington DC: The National Academies Press, 2008.
- DHHS, U.S. Department of Agriculture. *Report of the Dietary Guidelines Advisory Committee on the Dietary Guidelines for Americans, 2010.* Washington DC: Agricultural Research Service, USDA, 2010. www.cnpp.usda.gov/DGAs2010-DGACReport.htm.
- Siega-Riz AM, Deming DM, Reidy KC, Fox MK, Condon E, Briefel RR. Food consumption patterns of infants and toddlers: where are we now? *J Am Diet Assoc* 2010;110(12S):S38-51.
- Piernas C, Popkin BM. Trends in snacking among U.S. children. *Health Aff (Millwood)* 2010;29(3):398-04. www.ncbi.nlm.nih.gov/pmc/articles/PMC2837536/pdf/nihms174260.pdf.
- Reedy J, Krebs-Smith SM. Dietary sources of energy, solid fats, and added sugars among children and adolescents in the U.S. *J Am Diet Assoc* 2010;110(10):1477-84.
- American Association of Advertising Agencies. *Integrated marketing communications (IMC).* *Business Dictionary.com.* www.businessdictionary.com/definition/integrated-marketing-communications-IMC.html.
- Kitchen PJ, Brignell J, Li T, Jones GS. The emergence of IMC: a theoretical perspective. *J Advertising Res* 2004;44(1):19-30.
- Kovacic W, Harbour P, Leibowitz J, Rosch J. *Marketing food to children & adolescents: a review of industry expenditures, activities, and self-regulation.* Washington DC: Federal Trade Commission, 2008. www.ftc.gov/os/2008/07/P064504foodmktngreport.pdf.
- Kumanyika SK, Parker L, Sim LJ, editors; Committee on an Evidence Framework for Obesity Prevention Decision Making; Institute of Medicine. *Bridging the evidence gap in obesity prevention: a framework to inform decision making.* Washington DC: The National Academies Press, 2010.
- Cohen DJ, Crabtree BF. Evaluative criteria for qualitative research in health care: controversies and recommendations. *Ann Fam Med* 2008;6(4):331-9. w.annfam.org/cgi/reprint/6/4/33.
- Mays N, Pope C. Qualitative research in health care: assessing quality in qualitative research. *BMJ* 2000;320:50-2.
- Mays N, Pope C, Popay J. Systematically reviewing qualitative and quantitative evidence to inform management and policy-making in the health field. *J Health Serv Res Policy* 2005;10(1S):S6-20.
- Federal Trade Commission and DHHS. *Perspective on marketing, self-regulation, & childhood obesity: a report on a joint workshop of the Federal Trade Commission and DHHS, 2006.* www.ftc.gov/os/2006/05/PerspectivesOnMarketingSelfRegulation&ChildhoodObesityFTCandHHSReportonJointWorkshop.pdf.
- General Mills. *General Mills achieves further sugar reductions in cereals* [press release]. December 9, 2010. www.generalmills.com/en/Media/NewsReleases/Library/2010/December/BigG.aspx.
- Pepsi to cut salt, sugar and saturated fats. Reuters [news release]. March 21, 2010. www.reuters.com/article/idUSTRE62K25220100321.
- Kraft Foods Inc. *Kraft Foods plans to reduce sodium in North American products an average of 10 percent by 2012* [news release]. March 17, 2010. phx.corporate-ir.net/phoenix.zhtml?c=129070&p=irol-newsArticle&ID=1403344.
- Kolish ED, Peeler CL. *Changing the landscape of food & beverage advertising: the Children's Food and Beverage Advertising Initiative in action. A progress report on the first six months of implementation: July-December 2007.* Arlington VA: Council of the Better Business Bureaus, Inc., 2008. www.bbb.org/us/storage/16/documents/CFBAI/ChildrenF&BInit_Sep21.pdf.
- Peeler CL, Kolish ED, Enright M. *The Children's Food & Beverage Advertising Initiative in action. A report on compliance and implementation during 2008.* Arlington VA: Council of the Better Business Bureaus, Inc., 2009. www.bbb.org/us/storage/0/Shared%20Documents/CFBAI%20Report.pdf.
- Peeler CL, Kolish ED, Enright M, Burke C. *The Children's Food & Beverage Advertising Initiative in action. A report on compliance and implementation during 2009.* Arlington VA: Council of the Better Business Bureaus, Inc., 2010. www.bbb.org/us/storage/0/Shared%20Documents/BBBwithlinks.pdf.
- Healthy Weight Commitment Foundation. *Food and beverage manufacturers pledging to reduce annual calories by 1.5 trillion by 2015.* May 17, 2010 [press release]. www.healthyweightcommit.org/news/1-5-trillion-calories-by-2015.
- Grocery Manufacturers Association. *GMA: More than two-thirds of the advertisements seen by children and teens today promote more nutritious foods and healthy lifestyles* [news release]. March 9, 2010. <http://www.gmaonline.org/news-events/newsroom/gma-more-than-two-thirds-of-the-advertisements-seen-by-children-and-teens-t/>.
- Powell LM, Szczepka G, Chaloupka FJ. Trends in exposure to television food advertisements among children and adolescents in the U.S. *Arch Pediatr Adolesc Med* 2010;164(9):878-9. archpedi.ama-assn.org/cgi/reprint/164/9/794.
- Harris JL, Weinberg ME, Schwartz MB, Ross C, Ostroff J, Brownell KD. *Trends in television food advertising. Progress in reducing unhealthy marketing to young people?* New Haven CT: Rudd Center for Food Policy & Obesity, 2010. www.yaleruddcenter.org/resources/upload/docs/what/reports/RuddReport_TVFoodAdvertising_2.10.pdf.
- Wartella EA, Lichtenstein AH, Boon CS, editors; Committee on Examination of Front-of-Package Nutrition Ratings Systems and Symbols; Institute of Medicine. *Examination of front-of-package nutrition rating systems and symbols: phase I report.* Washington DC: The National Academies Press, 2010.
- Smart Choices Program helps shoppers identify better food and beverage choices [media release]. August 5, 2009. http://www.eurekalert.org/pub_releases/2009-08/asfn-scp080509.php#.

30. Healthy Weight Commitment Foundation. Healthy Weight Commitment Foundation introduced [media release]. October 5, 2009. www.healthyweightcommit.org/news/Foundation_Introduced/.
31. The White House Office of the First Lady. Remarks by the First Lady at Healthy Weight Announcement press conference. May 17, 2010 [press release]. www.whitehouse.gov/the-press-office/remarks-first-lady-healthy-weight-announcement-press-conference.
32. Council of the Better Business Bureaus. New food, beverage initiative to focus kids' ads on healthy choices; revised guidelines strengthen CARU's guidance to food advertisers [news release]. November 14, 2006. www.bbb.org/alerts/article.asp?ID=728.
33. Council of the Better Business Bureaus. Sara Lee Corporation joins industry initiative to promote healthier foods to kids [news release]. September 23, 2010. www.saralee.com/~media/ED121A9453FE4EBC8FC152A89482F32B.ashx.
34. Council of the Better Business Bureaus. Self-regulatory program for children's advertising. 9th edition. New York NY: Children's Advertising Review Unit, 2009. www.caru.org/guidelines/guidelines.pdf.
35. Lukovitz K. CFBAI tightens nutrition standards in kid ads. MediaPost News. December 17, 2009. www.mediapost.com/publications/?fa=Articles.showArticle&art_aid=119309.
36. Council of the Better Business Bureaus. BBB Children's Food and Beverage Advertising Initiative: participant definitions of advertising primarily directed to children under 12 and policies for not advertising to children under six. www.bbb.org/us/storage/0/Shared%20Documents/audience%20definitions%20for%20under%2012%20and%20under%20age%20six-final.pdf.
37. Healthy Weight Commitment Foundation. 2010 annual review. January 28, 2011. www.healthyweightcommit.org/HWCF_AnnualReport/HWCF_2010_AR.pdf.
38. The White House Office of the First Lady. Remarks by the First Lady at Healthy Weight Announcement press conference. May 17, 2010 [press release]. www.whitehouse.gov/the-press-office/remarks-first-lady-healthy-weight-announcement-press-conference.
39. Langlois A, Crossley R. The proof of the pudding. . benchmarking ten of the world's largest food companies' response to obesity and related health concerns. United Kingdom: JPMorgan and Insight Investment, 2008. www.insight-investment.co.uk/global/documents/rliterature/367922/proof_of_the_pudding_pres.pdf.
40. Harris JL, Schwartz MB, Brownell K, et al. Cereal FACTS: evaluating the nutrition quality and marketing of children's cereals, 2009. www.cerealfacts.org/media/Cereal_FACTS_Report.pdf.
41. Schwartz MB, Ross C, Harris JL, et al. Breakfast cereal industry pledges to self-regulate advertising to youth: will they improve the marketing landscape? *J Public Health Policy* 2010;31(1):59–73. www.palgrave-journals.com/jphp/journal/v31/n1/pdf/jphp200950a.pdf.
42. Henry A, Story M. Food and beverage brands that market to children and adolescents on the Internet: a content analysis of branded websites. *J Nutr Educ Behav* 2009;41(5):353–59.
43. Harris JL, Bargh JA, Brownell KD. Priming effects of television food advertising on eating behavior. *Health Psychol* 2009;28(4):404–13.
44. Lingas EO, Dorfman L, Bukofzer E. Nutrition content of food and beverage products on Web sites popular with children. *Am J Public Health* 2009;99(3S):S587–92.
45. Alvy L, Calvert SL. Food marketing on popular children's web sites: a content analysis. *J Am Diet Assoc* 2008;108(4):710–3.
46. Batada A, Seitz MD, Wootan MG, Story M. Nine out of 10 food advertisements shown during Saturday morning children's television programming are for foods high in fat, sodium, or added sugars, or low in nutrients. *J Am Diet Assoc* 2008;108(4):673–8.
47. Gantz W, Schwartz N, Angelini JR, Rideout V. Food for thought: television food advertisements to children in the U.S. Menlo Park CA: The Henry J. Kaiser Family Foundation, 2007. www.kff.org/entmedia/upload/7618.pdf.
48. Lee M, Yoonhyeung C, Quilliam ET, Cole RT. Playing with food: content analysis of food advergames. *J Consum Aff* 2009;43(1):129–54. www3.interscience.wiley.com/cgi-bin/fulltext/122207659/PDFSTART.
49. Moore E. It's child's play: advergaming and the online marketing of food to children. Menlo Park CA: The Henry J. Kaiser Family Foundation, 2006. www.kff.org/entmedia/upload/7536.pdf.
50. Powell LH, Szczypka G, Chaloupka FJ, Braunschweig CL. Nutritional content of television food advertisements seen by children and adolescents in the U.S. *Pediatrics* 2007;120(3):576–83. pediatrics.aappublications.org/cgi/reprint/120/3/576.
51. Weber K, Story M, Harnack L. Internet food marketing strategies aimed at children and adolescents: a content analysis of food and beverage brand websites. *J Am Diet Assoc* 2006;106(9):1463–6.
52. Mikkelsen L, Merlo C, Lee V, Chao C. Where's the fruit? Fruit content of the most highly-advertised children's food and beverages. Oakland CA: Prevention Institute, 2007. www.preventioninstitute.org/sa/fruit/wheresthefruit.pdf.
53. Colby SE, Johnson L, Scheett A, Hoverson B. Nutrition marketing on food labels. *J Nutr Educ Behav* 2010;42(2):92–8.
54. Sims J, Mikkelsen L, Gibson P, Warming E. Claiming health: front-of-package labeling of children's food. Prevention Institute, 2011. www.preventioninstitute.org/component/jlibrary/article/id-293/127.html.
55. Federal Trade Commission. FTC investigation of ad claims that Rice Krispies benefits children's immunity leads to stronger order against Kellogg [media release]. June 3, 2010. www.ftc.gov/opa/2010/06/kellogg.shtm.
56. Children's Advertising Review Unit. CARU recommends Kellogg discontinue certain claims on "Pop-Tarts" packaging. May 24, 2010 [news release]. www.caru.org/news/2010/5165PR.pdf.
57. Federal Trade Commission. Nestlé subsidiary to settle FTC false advertising charges; Will drop deceptive health claims for BOOST Kid Essentials [media release]. July 14, 2010. www.ftc.gov/opa/2010/07/nestle.shtm.
58. Neuman W. Food label program to suspend operations. The New York Times 2009, Oct 23. www.nytimes.com/2009/10/24/business/24food.html.
59. Batada A, Wootan MG. Better-for-who? Revisiting company promises on food marketing to children. Washington DC: Center for Science in the Public Interest, 2009. cspinet.org/new/pdf/pledgereport.pdf.
60. Macmullan J. Left wanting more: food company policies on marketing to children. London, UK: Consumers International, 2010. www.junkfoodgeneration.org/documents/Left_wanting_more.pdf.
61. Kunkel D, McKinley C, Wright P. The impact of industry self-regulation on the nutritional quality of foods advertised on television to children. Oakland CA: Children Now. December 2009. www.childrennow.org/uploads/documents/adstudy_2009.pdf.
62. Wootan MG, Batada A, Balkus O. Food marketing report card: an analysis of food and entertainment company policies to self-regulate food and beverage marketing to children. Washington DC: Center for Science in the Public Interest, 2010. cspinet.org/new/pdf/marketingreportcard.pdf.
63. Kraak VI, Story M. A public health perspective on the concept of healthy lifestyles and public-private partnerships for global obesity prevention. *Am Diet Assoc* 2010;110(2):192–200.
64. The Keystone Center. Keystone Forum on away-from-home foods: opportunities for preventing weight gain and obesity. Washington DC Keystone Center, 2006. keystone.org/files/file/about/publications/Forum_Report_FINAL_5-30-06.pdf.
65. Food and Drug Administration. FDA receives Keystone Forum report on away-from-home foods: improving consumers' ability to manage calorie intake key to anti-obesity efforts [news release]. June 2, 2006. www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/2006/ucm108661.htm.
66. Wootan M, Batada A, Marchlewicz E. Kids' meals: obesity on the menu. Washington DC: Center for Science in Public Interest, 2008. www.cspinet.org/kidsmeals.
67. O'Donnell SI, Hoerr SL, Mendoza JA, Tsuei Goh E. Nutrient quality of fast food kids meals. *Am J Clin Nutr* 2008;88(5):1388–95.
68. Harris JL, Schwartz MB, Brownell KD, et al. Fast food FACTS: evaluating fast food nutrition and marketing to youth. Rudd Center for Food Policy and Obesity, 2010. www.rwjf.org/files/research/20101108ffactsreport.pdf.

69. Nicklas TA, Hates D; American Dietetic Association. Position of the American Dietetic Association: nutrition guidance for healthy children ages 2 to 11 years. *J Am Diet Assoc* 2008;108(6):1038-44, 1046-7.
70. Gidding SS, Dennison BA, Birch LL, et al; American Heart Association. Dietary recommendations for children and adolescents. A guide for practitioners. *Pediatrics* 2006;117(2):544-59. pediatrics.aappublications.org/cgi/reprint/117/2/544.
71. Roberto CA, Larsen PD, Agnew H, Baik J, Brownell KD. Evaluating the impact of menu labeling on food choices and intake. *Am J Public Health* 2010;100(2):312-8.
72. Tandon PS, Wright J, Zhou C, Rogers CB, Christakis DA. Nutrition menu labeling may lead to lower-calorie restaurant meal choices for children. *Pediatrics* 2010;125(2):244-8. pediatrics.aappublications.org/cgi/reprint/125/2/244.
73. The Walt Disney Company introduces new food guidelines to promote healthier kids' diets. New policy to associate Disney brands and characters with a more nutritionally balanced range of foods [news release]. October 16, 2006. corporate.disney.go.com/news/corporate/2006/2006_1016_food_guidelines.html.
74. Grier SA, Kumanyika SK. The context for choice: health implications of targeted food and beverage marketing to African Americans. *Am J Public Health* 2008;98(9):1616-29.
75. National Policy and Legal Analysis Network to Prevent Childhood Obesity. Model California ordinance regulating chain restaurant giveaways with children's meals. 2009. www.nplanonline.org/childhood-obesity/products/model-ord-healthy-toy-giveaway.
76. Gordon R. S.F. proposal: healthier kids meals or no toys. *The San Francisco Chronicle*. August 11, 2010. www.sfgate.com/cgi-bin/article.cgi?file=/c/a/2010/08/11/MN1G1ES4M2.DTL.
77. Ordinance No. NS-300-820. An ordinance of the board of supervisors of the County of Santa Clara adding Chapter XXII of Division A18 to the County of Santa Clara ordinance code relating to toys and other incentives with restaurant food. April 26, 2010. www.sccgov.org/keyboard/attachments/BOS%20Agenda/2010/April%2027,%202010/202926863/TMPKeyboard203046978.pdf.
78. Gordon R. SF fast-food toy ban gets supervisors' first OK. *SFGate*. November 3, 2010. www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2010/11/02/MN11G5PCN.DTL.
79. Cancino A. McDonald's CEO stands up for Happy Meals. *The Chicago Tribune*. July 8, 2010. chicagobreakingbusiness.com/2010/07/mcdonalds-ceo-stands-up-for-happy-meal-toys.html.
80. Warner M. McDonald's magic: calories disappear from Happy Meals after chain is threatened with lawsuit. *CBS Business Network (BNET)*. July 13, 2010. industry.bnet.com/food/10002721/mcdonalds-magic-calories-disappear-from-happy-meals-after-chain-is-threatened-with-lawsuit?tag=content;top-active#comments.
81. Gardner S. Letter to McDonald's Corporation and McDonald's USA. Center for Science in the Public Interest v. McDonald's USA, LLC. June 22, 2010. cspinet.org/new/pdf/mcdonalds-demand-062210.pdf.
82. Center for Science in the Public Interest. Class action lawsuit targets McDonald's use of toys to market to children. December 15, 2010 [press release]. www.cspinet.org/new/201012151.html.
83. The White House Office of the First Lady. Remarks by the First Lady in address to the National Restaurant Association meeting. September 13, 2010 [press release]. www.whitehouse.gov/the-press-office/2010/09/13/remarks-first-lady-address-national-restaurant-association-meeting.
84. American Beverage Association. School Beverage Guidelines Progress Report 2006-2007, September 2007. www.ameribev.org/files/240_progress_report_full.pdf.
85. American Beverage Association. School beverage guidelines progress report 2007-2008, September 2008. www.healthiergeneration.org/uploadedFiles/About_The_Alliance/SchoolBeverageReport.pdf.
86. American Beverage Association. Alliance School Beverage Guidelines Final Progress Report, 2010. www.ameribev.org/files/240_School%20Beverage%20Guidelines%20Final%20Progress%20Report.pdf.
87. American Beverage Association. Beverage industry will make calories more clear and useable for consumers [news release]. February 9, 2010. www.ameribev.org/news-media/news-releases-statements/more/180/.
88. Food Marketing Institute. Health & wellness. www.fmi.org/health-wellness/.
89. Food Marketing Institute. Obesity strategy. Approved by the FMI Board of Directors, January 10, 2004. www.fmi.org/docs/health/ObesityStrategy_2004.pdf.
90. United Fresh Produce Association. News and issues. www.unitedfresh.org/newsviews/project_fresh_start.
91. Association of National Advertising. ANA mission. www.ana.net/about/content/mission.
92. American Association of Advertising Agencies. About the Association. <http://www.aaa.org/about/association/Pages/default.aspx>.
93. National Restaurant Association. About Us. <http://www.restaurant.org/aboutus/>.
94. National Confectioners Association. Year in review: 2008. nca.files.cms-plus.com/Year_In_Review_2008.pdf.
95. Snack Food Association. Introduction. www.sfa.org/who/introduction.aspx.
96. Alliance for a Healthier Generation. President Clinton and AHA announce joint agreement between Alliance for a Healthier Generation and food industry leaders to set healthy standards for snacking in school. October 6, 2006 [press release]. www.healthiergeneration.org/uploadedFiles/For_Schools/snack-press-release.pdf.
97. Borradaile KE, Sherman S, Vander Veur SS, et al. Snacking in children: the role of urban corner stores. *Pediatrics* 2009;124(5):1293-8. pediatrics.aappublications.org/cgi/reprint/124/5/1293.
98. Farley TA, Baker ET, Futrell L, Rice JC. The ubiquity of energy-dense snack foods: a national multicity study. *Am J Public Health* 2010;100(2):306-11.
99. Wilgoren D, Mui YQ. With praise from Michelle Obama, Wal-Mart announces healthy food campaign. *The Washington Post*. June 20, 2011. www.washingtonpost.com/wp-dyn/content/article/2011/01/20/AR2011012001581.html.
100. The White House Office of the First Lady. First Lady Michelle Obama launches Let's Move: America's move to raise a healthier generation of kids. February 9, 2010 [press release]. www.whitehouse.gov/the-press-office/first-lady-michelle-obama-launches-lets-move-americas-move-raise-a-healthier-genera.
101. White House Task Force on Childhood Obesity. Solving the problem of childhood obesity within a generation: White House Task Force on Childhood Obesity report to the president. May 2010. www.letsmove.gov/pdf/TaskForce_on_Childhood_Obesity_May2010_FullReport.pdf.
102. National Restaurant Association says nutrition information provision is win for consumers and restaurants. March 22, 2010 [news release]. www.restaurant.org/pressroom/pressrelease?ID=1910.
103. Spolar C, Eaton J. Food lobby mobilizes, as soda tax bubbles up. *The Huffington Post* November 4, 2009. huffpostfund.org/stories/2009/11/soda-tax-bubbles-food-lobby-mobilizes.
104. Food Marketing Institute and the Grocery Manufacturers Association. Food & beverage industry announces front-of-pack nutrition labeling initiative to inform consumers and combat obesity [media release]. October 27, 2010. www.gmaonline.org/news/docs/NewsRelease.cfm?DocID=20158.
105. Grocery Manufacturers Association. Food and beverage industry launches nutrition keys front-of-pack nutrition labeling initiative to inform consumers and combat obesity [press release]. January 24, 2011. www.gmaonline.org/news-events/newsroom/food-and-beverage-industry-launches-nutrition-keys-front-of-pack-nutrition-/.
106. Food Marketing Institute. Food and beverage industry launches Nutrition Keys Front-of-Pack Nutrition Labeling Initiative to inform consumers and combat obesity; nutrition icon to be supported by \$50 million industry-funded consumer education campaign [news release]. January 24, 2011. www.fmi.org/news_releases/index.cfm?fuseaction=mediatext&id=1207.
107. Neuman W. Food makers devise own label plan. *The New York Times*. January 24, 2011. www.nytimes.com/2011/01/25/business/25label.html?_r=2.
108. Council of the Better Business Bureaus. Children's Food and Beverage Advertising Initiative program and core principles statement. Arlington

- VA: CBBB. Revised Nov 2009. www.bbb.org/us/storage/0/Shared%20Documents/Core%20Principles%20Final%20Letterhead%2012-2-09.pdf.
109. Council of the Better Business Bureaus. 3rd annual report on the Children's Food and Beverage Advertising Initiative shows excellent compliance [news release]. December 15, 2010. <http://www.bbb.org/us/article/3rd-annual-report-on-the-childrens-food-and-beverage-advertising-initiative-shows-excellent-compliance-24271>.
 110. Lukovitz K. CFBAI reports on kids' marketing compliance. MediaPost News. December 15, 2010. http://www.mediapost.com/publications/index.cfm?fa=Articles.showArticle&art_aid=141429.
 111. Holt DJ, Ippolito PM, Desrochers DM, Kelley CR. Children's exposure to TV advertising in 1977 and 2004. zcn>Federal Trade Commission Bureau of Economics Staff Report, 2007. www.ftc.gov/os/2007/06/cabecolor.pdf.
 112. Office of U.S. Senator Dick Durbin. Durbin co-chairs hearing on childhood obesity [news release]. September 23, 2008. durbin.senate.gov/showRelease.cfm?releaseId=303513.
 113. Carugati A. FCC dissatisfied with media's reluctance to fight childhood obesity. *Worldscreen.com*. September 24, 2008. www.commercialalert.org/issues/health/childhood-obesity/fcc-dissatisfied-with-medias-reluctance-to-fight-childhood-obesity.
 114. Omnibus Appropriations Act of 2009 (H.R. 1105). rpc.senate.gov/public/_files/L6OmnibusAppropriations03022009.pdf.
 115. Interagency Working Group on Food Marketed to Children. Tentative proposed nutrition standards. Washington DC. December 15, 2009. ftc.gov/bcp/workshops/sizingup/SNAC_PAC.pdf.
 116. Neuman W. Ad rules stall, keeping cereal a carton staple. *The New York Times*. 2010, Jul 24. www.nytimes.com/2010/07/24/business/media/24food.html?_r=2&hp.
 117. Thomaselli R. FTC subpoenas 48 food companies regarding marketing to kids. *Advertising Age*. September 1, 2010. adage.com/article?article_id=145675.
 118. Federal Trade Commission. Food industry marketing to children and adolescents study: paperwork comment; project no. P094511. *Federal Register* 2009;74(181):48072–5. www.ftc.gov/os/2009/09/090921foodmarketingnotice.pdf.
 119. Montgomery KC, Chester J. Interactive food and beverage marketing: targeting adolescents in the digital age. *J Adolesc Health* 2009;45(3S):S18–29. www.digitalads.org/documents/PIIS1054139X09001499.pdf.
 120. Council of the Better Business Bureaus. Fact Sheet on the Elementary School Advertising Principles. Arlington VA: CBBB, 2009. www.bbb.org/us/storage/0/Shared%20Documents/ESFactSheetFinalWord.pdf.
 121. Wootan MG. Center for Science in the Public Interest letter to Ms. Elaine Kolish, Children's Food and Beverage Advertising Initiative. September 22, 2009. www.cspinet.org/new/pdf/cbbletter.pdf.
 122. Kolish ED. Council of the Better Business Bureaus letter to Ms. Margo Wootan, Center for Science in the Public Interest. December 14, 2009. www.bbb.org/us/storage/0/Shared%20Documents/CSPI%20response%2012-14-09.pdf.
 123. Harris JL, Schwatz MB, Brownell KD. Marketing foods to children and adolescents: licensed characters and other promotions on packaged foods in the supermarket. *Pub Health Nutr* 2010;13(3):409–17. www.yaleruddcenter.org/resources/upload/docs/what/advertising/LicensedCharacters_PHN_3.10.pdf.
 124. Roberto CA, Baik J, Harris JL, Brownell KD. Influence of licensed characters on children's taste and snack preferences. *Pediatrics* 2010;126(1):88–93. pediatrics.aappublications.org/cgi/reprint/126/1/88.
 125. Batada A, Wootan MG. Nickelodeon markets nutrition-poor foods to children. *Am J Prev Med* 2007;33(1):48–50.
 126. Center for Science in the Public Interest. Nickelodeon: food marketing little improved between 2005 & 2008. October 2008. cspinet.org/new/pdf/nickelodeon_fact_sheet_2008.pdf.
 127. Martin A. Nickelodeon to limit use of characters on junk foods. *The New York Times*. August 16, 2007. http://www.nytimes.com/2007/08/16/business/16kids.html?_r=1.
 128. International Food Information Council Foundation. Trends in Obesity-Related Media Coverage. September 2009.
 129. Schwitzer G. The state of health journalism in the U.S. The Henry J. Kaiser Family Foundation, 2009. www.kff.org/entmedia/upload/7858.pdf.
 130. Story M, Kaphingst KM, Robinson-O'Brien R, Glanz K. Creating healthy food and eating environments: policy and environmental approaches. *Annu Rev Public Health* 2008;29:253–72.
 131. Koplan JP, Liverman CT, Kraak VI, Wisham SL, editors; Committee on Progress in Preventing Obesity in Children and Youth; Institute of Medicine. *Progress in preventing childhood obesity: how do we measure up?* Washington DC: The National Academies Press, 2007.
 132. Interagency Working Group on Food Marketed to Children. Preliminary Proposed Nutrition Principles to Guide Industry Self-Regulatory Efforts. Request for Comments. FCC, CDC, FDA and USDA. April 2011. <http://www.ftc.gov/os/2011/04/110428foodmarketproposedguide.pdf>.
 133. Food and Drug Administration. New front-of-package labeling initiative, 2009. www.fda.gov/Food/LabelingNutrition/ucm202726.htm.
 134. U.S. Department of Agriculture and DHHS. *Dietary guidelines for Americans, 2010*. 7th edition. Washington DC: U.S. Government Printing Office, December 2010. www.cnpp.usda.gov/DGAs2010-PolicyDocument.htm.
 135. Council of Better Business Bureaus announces groundbreaking agreement on child-directed food advertising [news release]. July 14, 2011. <http://www.bbb.org/us/article/Council-of-Better-Business-Bureaus-Announces-Groundbreaking-Agreement-on-Ch-28325>.

Appendix

Supplementary data

Supplementary data associated with this article can be found, in the online version, at doi:10.1016/j.amepre.2011.05.029.

A pubcast created by the authors of this paper can be viewed at http://www.ajpmonline.org/content/video_pubcasts_collection.