

Food and Beverage Marketing to Children and Adolescents: An Environment at Odds with Good Health

Healthy Eating Research

Building evidence to prevent childhood obesity

A Research Synthesis, April 2011

The science is clear: the environments where children grow up, play and go to school affect their diets and health.^{1,2} The same environments also structure the choices children, their families and caregivers make about food and physical activity.³

Children in the United States grow up in environments saturated by food and beverage marketing, the bulk of it for foods low in nutrients and high in calories, sugars, salt and fat.² A rigorous review by an independent committee of the Institute of Medicine (IOM) found that such marketing influences children's and adolescents' food preferences and purchasing requests, and dietary intake,² and it contributes to the high rates of overweight and obesity observed in American children and adolescents, ages 2 to 19.^{4,5} Between 1994 and 2004, 58 percent of new food products marketed to children and adolescents were in the candies, snacks, cookies and ice cream categories, and 40 percent of new beverage products were in the fruit and fruit-flavored drinks categories.⁶

To reach children and adolescents, food and beverage companies use integrated marketing communications strategies, which encompass all forms of communication about products and services. Integrated marketing communications strategies include creating special products⁶ and packaging⁷ for children; adjusting price points so products are affordable to youths with limited budgets; making products available in the places frequented by youths; and conducting numerous promotions so that young people will remember, prefer and predictably select specific companies' brands, many of which do not offer products that contribute to a healthful diet consistent with the 2010 Dietary Guidelines for Americans.⁸

In 2007, 11 major food and beverage marketers pledged to improve their advertising and marketing practices aimed at children ages 12 and younger through the Children's Food and Beverage Advertising Initiative (CFBAI),⁹ which is overseen by the Council of Better Business Bureaus. In 2010, the number of participating companies increased to 17, and the pledges were expanded to require adherents to devote 100 percent of child-targeted advertising to "better-for-you" products, such as Burger King's Fresh Apple Fries. (The original pledge involved increasing the percentage of advertising for better-for-you products by 50 percent.)



The pledges were revised further to include improving the percentage of better-for-you products advertised using new media as well. New forms of digital media include websites, mobile marketing via SMS text and Web-enabled phones, social networks, online games and video, and DVD content.¹⁰ Independent researchers have since found that CFBAI-participating companies' changes to television advertising practices to be largely ineffective.^{11,12}



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Focusing on studies published between January 2008 and February 2011, this synthesis examines research on U.S. trends in food and beverage marketing to children and adolescents. It builds on a *Healthy Eating Research* brief released in October 2008¹³ and examines the growing body of research that independently assesses industry self-regulation. It also identifies policy implications and highlights additional research needs and opportunities.

Key Research Results

- Young people consume more media than ever before, spending 7.5 hours per day online, watching television (TV), using mobile devices, listening to music, playing video games and reading print materials. Moreover, youths often multitask, so their consumption of various media totals nearly 11 hours daily.¹⁴ During those hours, food and beverage marketing is pervasive. For example, the fast-food restaurant industry alone spent more than \$4.2 billion dollars in 2009—nearly half a million dollars every hour—on marketing to children and adults.¹⁵
- Research across a variety of print, broadcast and digital media (i.e., TV, websites, digital advergames, games that incorporate brands as content into the game experience, and product packaging) demonstrates that marketing is effective. Young people's exposure to food and beverage marketing affects their preferences for the branded products. Research on TV advertising alone shows that exposure affects young people's consumption of the marketed products,^{16–18} and influences their food and beverage purchasing patterns even five years after the initial exposure.¹⁸
- The food and beverage industry spends most of their money marketing their products to children and adolescents on TV advertisements.¹⁹ Two studies have confirmed that, except for fast-food restaurants, food and beverage companies reduced the number of TV food and beverage advertisements targeted to children before industry self-regulatory pledges were made in 2007.^{11, 20} Still, the use of licensed characters by CFBAI member companies doubled during this time,¹¹ and the nutritional quality of the foods these companies market to children and adolescents on TV has not improved, as over 80 percent of products are high in saturated fat, sugar or sodium.^{11, 15, 20}
- Food marketers increasingly use a variety of digital media popular with young people to promote their products to children and adolescents. These channels allow them to bypass parental supervision and develop direct, intimate and prolonged relationships with children and adolescents via websites,^{15, 21–24} online

advergames,²⁵ mobile devices and social network marketing.^{26, 27} Restaurant corporations even deliver branded content over the Internet to 2-year-old children.¹⁵ Industry spending on digital media has steadily increased,²⁶ but the dollar amount of expenditures underestimates the impact on children's and adolescents' exposure to new media because the cost of digital media per impression is relatively inexpensive compared with other traditional channels such as TV advertising.²⁸

- Marketers surround children and adolescents with promotions in the places where they live, learn and play. For example, children are exposed to marketing in schools where they are a captive audience,²⁹ at the point of purchase in stores and chain restaurants,³⁰ and through food retail outlets and billboards.
- Latino and African-American youths are early adopters and heavy users of digital media, and food companies view them as trendsetters.³¹ They also are targeted with branded food and beverage products of lower nutritional quality than White children and adolescents.^{15, 20}

Details on Key Research Results

Young people consume more media than ever before, spending 7.5 hours per day online, watching TV, using mobile devices, listening to music, playing video games and reading print materials. Moreover, youths often multitask so their consumption of various media totals nearly 11 hours daily.¹⁴ During those hours, food marketing is pervasive. For example, the fast-food industry alone spent more than \$4.2 billion dollars in 2009—nearly half a million dollars every hour—on marketing to children and adults.¹⁵

- The total media exposure, including simultaneous use across media, for youth ages 8 to 18 increased from eight hours and 33 minutes in 2004 to ten hours and 45 minutes in 2009.¹⁴ Children and adolescents watch TV for four hours and 29 minutes per day, and spend an average of one hour and 29 minutes daily on computers outside of schoolwork, a three-fold increase since 1999.¹⁴ Internet access has expanded from 74 percent to 84 percent among youths ages 8 to 18, while cell phone access among the same group increased from 39 percent in 2004 to 66 percent in 2009,¹⁴ and one in three teens now uses the mobile Web.³²
- Marketers have responded by increasing their efforts to reach young people through traditional and new media communication channels. In 2009, the fast-food restaurant industry alone spent more than \$4.2 billion

dollars—nearly half a million dollars every hour—on TV, digital, mobile, outdoor, radio advertising, and other media marketing to children and adults.¹⁵ The four major cereal manufacturers (i.e., General Mills, Kellogg's, Post and Quaker) spent \$156.2 million dollars marketing their products to children in 2008.²¹

Research conducted across a variety of media (i.e., TV, websites, digital advergames and product packaging) demonstrates that marketing is effective. Young people's exposure to food and beverage marketing affects their preferences for the branded products. Research on TV advertising alone shows that exposure affects young people's consumption of the marketed products,¹⁶⁻¹⁸ and influences their food and beverage purchasing patterns even five years after the initial exposure.¹⁸

- Digital marketing leads children to prefer the advertised product or brand. Students exposed to branded banner advertisements on websites were more likely to prefer that brand than students who had not been exposed, even if they could not remember seeing the advertisement.³³ Four studies found that children who play online advergames (games that incorporate brands as content into the game experience) are more likely to prefer the associated brand and its food products when compared with unbranded foods.³⁴⁻³⁷
- Product packaging is an equally powerful medium that marketers use to reach children. For example, using experimental methods, researchers found that children preferred foods packaged with licensed characters compared with the same foods in plain packaging, regardless of whether the foods were healthy or unhealthy. Licensed characters on product packaging affected children's responses about how the foods tasted, as well as their preference for the foods as a future snack choice.³⁸ A study that analyzed the packaging of food products marketed to children in a Canadian grocery store found that 89 percent of the products were high in sugar, fat or sodium.⁷ Of those products, however, 62.7 percent included nutrition claims on the front of their packaging.⁷
- The evidence continues to mount² that children's exposure to TV advertisements increases their preferences for the advertised products. In a controlled experiment, children exposed to TV content with food advertising consumed 45 percent more food than children exposed to content with non-food advertising, regardless of the food advertised or the characteristics of the child.¹⁷ Exposure to televised food and beverage advertising during middle and high school also has long-lasting effects on purchasing decisions. Even five years after adolescents have been exposed to

promotions of unhealthy foods, researchers found that they purchased fewer fruits, vegetables and whole grains, but increased their consumption of fast foods, fried foods and sugar-sweetened beverages.¹⁸

The food and beverage industry spends most of their money promoting their products to children and adolescents on TV advertisements.¹⁹ Two studies have confirmed that, except for fast-food restaurants, food and beverage companies reduced the number of TV food and beverage advertisements to children before industry self-regulatory pledges were implemented in 2007.^{11,20} Still, the use of licensed characters by CFBAI members doubled during this time,¹¹ and the nutritional quality of the foods these companies market to children and adolescents on TV has not improved, as over 80 percent of products are high in saturated fat, sugar or sodium.^{11,15,20}

- In 2009, researchers estimate that marketers exposed children to an average of 7.6 food and beverage advertisements per hour, a decrease from 10.6 advertisements in 2005.¹¹ Nevertheless, multiple studies show that exposure to fast-food advertisements on TV have been increasing significantly among all age groups of children and adolescents.^{11,15} Exposure to fast-food restaurant advertisements increased by 4.7 percent, 12.2 percent, and 20.4 percent among children ages 2 to 5, 6 to 11, and 12 to 17, respectively, between 2003 and 2007.³⁹ More recent data are even stronger, suggesting that compared with 2003, in 2009 preschoolers ages 2 to 5 years viewed 21 percent more fast-food advertisements, children ages 6 to 11 viewed 34 percent more advertisements, and teens ages 12 to 17 viewed 39 percent more advertisements than in earlier years.¹⁵
- Licensed characters (e.g., Shrek or Dora the Explorer) affect children's preferences for food products because children trust the characters they are exposed to during programming.² CFBAI-participating companies have doubled their use of licensed characters since 2005 despite pledges not to use them.¹¹ Nearly three-quarters (74 percent) of advertisements during Saturday morning TV programming used licensed characters to promote branded food products.⁴⁰
- Researchers employing a variety of independent nutritional criteria have found that the majority of foods marketed to children on TV are unhealthy. Using nutrition education guidelines developed by the U.S. Department of Health and Human Services for the National Institutes of Health *We Can!* (Ways to Enhance Children's Activity & Nutrition) program,⁴¹ one study found that 99 percent of foods marketed to children on TV qualified as "Whoa" or "Slow"—foods of little

or moderate nutritional value—while only 1 percent represented healthy “Go” foods.¹¹ A child would have to watch 10 hours of TV to see one advertisement for a healthy food, compared with viewing 75 advertisements for unhealthy foods during that time. A separate study found that in 2009, at least 86 percent of food products in TV advertisements seen by children ages 2 to 11 are unhealthy.³⁶ More than 90 percent of foods advertised during Saturday morning TV programming exceed recommendations set in the Dietary Guidelines for Americans⁸ for sugar, fat or salt.⁴⁰

Food marketers increasingly use a variety of digital media popular with young people to promote their products to children and adolescents. These channels allow them to bypass parental supervision and develop direct, intimate and prolonged relationships with children and adolescents via websites,^{15, 21-24} online advergames,²⁵ mobile devices and social network marketing.^{26, 27} Restaurant corporations even deliver branded content over the Internet to 2-year-old children.¹⁵ Industry spending on digital media has steadily increased,²⁶ but the dollar amount of expenditures underestimates the impact on children’s and adolescents’ exposure to digital media because the cost of digital media per impression is relatively inexpensive compared with other channels such as TV advertising.²⁸

- Marketing embedded in digital content seeks to create long-lasting and intimate engagements with children and is saturated with branded features. The most engaging branded cereal websites captured children’s attention, on average, for 27 minutes, far outpacing the classic 30-second TV spot.²¹ The most elaborate food websites offer children “virtual worlds,” multi-page digital spaces where registered children can create avatars, play advergames, watch videos and communicate with other users.^{15, 21} Among child-targeted websites of the top food and beverage brands, 97 percent showed a brand logo or product; 92 percent had engagement features, such as games, videos and forward-to-a-friend options; 79 percent had cross-promotions with other brands, including sporting events, celebrities or athletes, and cartoon characters; and 70 percent allowed users to register or create an account, which allows marketers to target children and adolescents directly.⁴²
- Food companies extensively use advergames, which are popular among children. In 2006, 78.1 percent of children ages 6 to 11 years played some form of online game, with half playing 6 to 16 hours or more per week.²⁵ Three studies found that advergames appear on over 80 percent of child-targeted websites.^{22, 23, 42} An analysis of

the content of advergames on the websites of the 139 brands from the top 25 food companies found that 88 percent of the games on websites were advergames, but only 2.7 percent educated children about nutrition and health.²⁵ Sixty-seven percent of these advergames actively integrated brands or products into the game; the remainder displayed the brand or product but did not incorporate it into the gaming experience.²⁵ Advergames appeared on 84 percent of food websites that were advertised on Nickelodeon and the Cartoon Network. These advergames averaged 7.5 brand identifiers per game; during the games an online visitor would be exposed to an average of 45 brand identifiers to one healthy nutrition or physical activity message.²³

- When images of food products appear in child-targeted Web content, they often fail independent nutritional criteria for healthy foods. Three website content analyses using the IOM’s criteria⁴³ for healthy school foods,^{21, 24, 25} and one study using the nutrition criteria set by the National Alliance for Nutrition Activity (that were based on the 2005 Dietary Guidelines for Americans⁴⁴)²² found that at least 64 percent of foods targeted to children on websites were unhealthy.
- The expansion of social and mobile media allows marketers to target children with marketing strategies integrated across many communication media. For example, 11 of the 12 major fast-food restaurant companies maintain at least one Facebook account—nine of which had more than a million fans in 2009; maintained Twitter accounts; and had at least one YouTube channel between 2009 and 2010.¹⁵ The top three ready-to-eat cereal manufacturers had 22 Facebook fan pages sponsored by the companies and over 3,400 Facebook or MySpace groups initiated by consumers.²¹ Marketing on mobile devices is a nascent but increasingly popular marketing technique. The development of smartphone applications and location-based services allows marketers to reach youths anywhere at any time, and without parental supervision. Eight of the 12 leading fast-food restaurant chains by sales ran 443 individual banner advertisements on mobile websites alone in 2009, and smartphone applications were available for eight restaurant chains, including ordering applications for Pizza Hut and Dominos.¹⁵
- The food, beverage and restaurant industry’s spending on digital media platforms, including mobile, social networks and online video, is expected to increase rapidly.^{26, 27} For example, General Mills’ investment in digital media spending tripled between 2007 and 2010.⁴⁵

Marketers surround children with promotions in the places where they live, learn and play. For example, children are exposed to marketing in schools where they are a captive audience,²⁹ at the point of purchase in stores and restaurants,³⁰ and through food retail outlets and billboards.

- In-school marketing is a pervasive and effective method of promoting food to children. In 2008, corporations that sold products of minimal nutritious value secured fundraising and incentive program contracts with 37.7 percent and 31.6 percent of U.S. primary schools, respectively.⁴⁶ At least one competitive food (foods outside of school meal programs, such as those sold in vending machines) is available in 73 percent of elementary schools, and 97 percent to 100 percent of middle and high schools.⁴⁷ Popular items available to children are sugary drinks, chips, candy, cookies and snack cakes.⁴⁸ The availability of healthy or unhealthy foods to children in a school environment increases consumption of these items.^{43, 49, 50} In addition, the availability of unhealthy foods is linked with higher rates of students' obesity;^{51, 52} and when unhealthy competitive foods are limited or not sold at schools, students have better quality diets because participation in the school meals program increases, which helps to compensate for revenue losses.⁵³
- Two studies using the 2005 daily calorie recommendations for children and adolescents as suggested by the Dietary Guidelines for Americans⁴⁴ estimate that at least 8 percent of children's caloric intake derives from competitive school foods and that on average, students consume at least 177 calories from competitive foods per day.^{47, 54}
- Marketers also reach children at the point of purchase in stores through branded product packaging. The leading cereal manufacturers General Mills and Kellogg's, for example, "dominate the middle shelf" of grocers' cereal aisles in order to put their products at children's eye level.²¹ Researchers who examined the nutrition labels of child-targeted products available at a U.S. grocer from 2006 to 2008 found that only 18 percent of products met the IOM's nutritional standards for competitive school foods,⁴³ and the nutritional quality of youth-targeted foods declined over the study period.⁵⁵ The number of products targeting youths with cross-promotions increased by 78 percent, and overall, 57 percent appealed primarily to children younger than age 12.⁵⁵ Food manufacturers that had made CFBAI pledges significantly increased

their use of cross-promotions, while the nutritional quality of their products did not improve from 2006 to 2008.⁵⁵ A study analyzing 58 better-for-you child-targeted foods found that 84 percent of foods with packaging targeting children in a grocery store were unhealthy.¹² A nutrition analysis of cereals produced by the four leading manufacturers found that products marketed to children were 52 percent denser in sugar, but had less than half as much fiber per gram as the cereals marketed to adults. Only 34 percent of child-targeted cereals met the nutrition standards set by the Alliance for a Healthier Generation and the American Heart Association.⁵⁶

- Many of the major fast-food restaurant companies, including McDonald's Corporation, Burger King, Wendy's⁵⁷ and Yum! Brands' Taco Bell,⁵⁸ state that they promote only healthy side dishes and beverages in their child-targeted promotions.⁵⁹⁻⁶¹ However, an independent evaluation found that the default option offered to children at these chain restaurants included french fries in at least 86 percent of visits and sweetened soft drinks at least 55 percent of the time.¹⁵
- Food and beverage marketers also target neighborhoods where children live, play and go to school. The presence of a fast-food chain restaurant outlet near a school has been shown to increase students' obesity rates by at least 5 percent.⁶² Schools in higher-income neighborhoods have 32 percent and 50 percent fewer fast-food restaurants and convenience stores within walking distance, respectively, than schools located in lower-income neighborhoods.³⁰ Schools that serve higher socioeconomic status (SES) students offer more healthy options, while schools that serve predominantly lower-SES populations have less-healthy options in vending machines, school stores and snack bars.⁶³ Overall, lower and middle-income neighborhoods have 1.28 to 1.34 times the number of fast-food restaurants compared with higher-income neighborhoods.⁶⁴

Latino and African-American youths are early adopters and heavy users of digital media, and food companies view them as trendsetters.³¹ They also are targeted with branded food and beverage products of lower nutritional quality than White children and adolescents.^{15, 20}

- High-energy, low-nutrient foods are advertised to Latino and African-American youths at even higher rates than White children. Since 2003, advertising to African-American children of items such as cookies and fast food has risen substantially in comparison

to White children.²⁰ Each day, African-American children see twice as many calories advertised in fast-food commercials than White children.¹⁵ Moreover, Latino and African-American children are significantly more likely to see advertisements for high-energy, nutrient-poor fast-food meals available at McDonald's Corporation, Burger King, and Yum! Brands' chain restaurants (i.e., KFC and Taco Bell). McDonald's Corporation alone is responsible for one quarter of all fast-food restaurant advertising to Latino youths.¹⁵

- African-American and Latino teens are valuable to marketers because of their high levels of new media consumption.¹⁴ African-Americans and Latinos use almost five hours more of media each day than their White counterparts, and by 2011, 61.5 percent of African-Americans and 50.3 percent of Hispanic/Latinos are projected to have access to the Internet.²⁶ Latinos are known as early adopters of new media: they are active Internet and mobile phone users,⁶⁵ and are the primary consumers of mobile data systems among other new media innovations.²⁷ Marketers view ethnically and racially diverse youths as being particularly vulnerable to media messaging. One study of African-American children found that they are willing to purchase any items advertised in a targeted online advergaming.⁶⁶
- Ethnically targeted advertising to children is pervasive across traditional and new media. African-American children see significantly more fast-food television advertisements than their White counterparts,^{15, 20} a disparity that has grown since 2003.²⁰ Hispanic preschoolers who are exposed to advertising on Spanish-language and English-language channels see almost 300 advertisements for fast foods each year on Spanish-language channels alone.¹⁵ Fast-food,¹⁵ sweetened soda,²⁶ and ready-to-eat cereal²¹ companies and their marketing research and public relations firms have developed sophisticated websites and Web-marketing campaigns designed to appeal specifically to young, African-American and Latino consumers.
- African-American and Latino neighborhoods have as much as 13 times the density of outdoor advertising than White neighborhoods.⁶⁷ Schools located in neighborhoods whose residents are racially mixed are 1.14 to 1.19 times as likely to be within walking distance of a fast-food restaurant or a convenience store than schools in neighborhoods that are more than 70 percent non-Hispanic White.³⁰ Local fast-food restaurant density is significantly associated with neighborhood obesity rates.⁶⁸

Conclusions

Using integrated marketing communications strategies, leading food, beverage and restaurant companies have created a sophisticated, ubiquitous environment promoting unhealthy foods, beverages and meals to children and adolescents that do not support a healthful diet consistent with the Dietary Guidelines for Americans. Children and adolescents are increasingly exposed to promotions for energy-dense and nutrient-poor foods and beverages across print, broadcast and digital media—new and old—despite some declines in the number of non-fast-food TV advertisements. The CFBAI-participating companies' pledges to improve their advertising practices have not improved the situation. Evidence shows that children's and adolescents' exposure to high-calorie, high-fat, sugary and low-nutrient foods and beverages is more extensive, more pervasive and very challenging for young audiences to recognize as target marketing.

The integrated marketing communications strategies have expanded far beyond TV into new media, making the traditional measures of media exposure less relevant to accurately capture total exposure. Because these unmeasured media venues are inexpensive compared with measured media such as television, using expenditures as a proxy for exposure is likely to underestimate the reach of food and beverage marketing to young people.^{26, 27} The new marketing paradigm requires new research methods, frequent monitoring, and careful analysis and evaluation to inform effective policies that protect children and adolescents.

The young populations most at risk for overweight and obesity are also the most voracious media consumers. And they are subject to school and neighborhood environments where marketing of unhealthy foods and beverages is pervasive and constant. Unabated, the current food and beverage marketing and media landscape will continue to contribute to child and adolescent obesity.

Areas Where Additional Research Is Needed

Promotion. Additional research is needed to better understand how branded integrated marketing communications reach and affect the preferences, diets and health of children and adolescents. For example, fast-food restaurant websites targeting children generally focus on highlighting images of the brand and when they do show food, they depict the healthiest options. How do these marketing strategies affect consumers' food choices? Similarly, food and beverage companies participating in the CFBAI have limited their TV advertising in programming where children comprise the majority of

the audience. But far more children are exposed to food marketing in programs targeted to a broad audience¹⁵ such as American Idol, when they may watch these programs with older siblings or parents. How does such marketing affect children's food preferences and consumption? Additionally, there is limited research about the reach and effects of on-package marketing, the use of licensed characters and the content of in-school marketing.

Digital marketing. More research is needed to better understand the extent and effects of digital marketing in terms of teens' vulnerability to marketing—especially campaigns employing the highly effective neuromarketing research that uses functional magnetic resonance imaging and other technologies to monitor brain responses to advertising. Research should explore the health consequences of digital marketing and emerging technologies such as mobile and location-based marketing. Overall, this research should define brand advertising and help determine standards for marketing foods and beverages to children and adolescents.

Places. In food retail locations, researchers should analyze slotting fees to understand the effects of incentives that retailers are paid to place unhealthy foods in prime shelf space, and the nutritional content of foods and beverages at checkouts in food and non-food stores. In restaurants, research is needed on the default options offered and nutritional quality of children's and adolescents' meals, as well as on the effect of toy promotions on children's food preferences, eating behaviors and diet quality. School-based marketing research should examine the availability of competitive foods; the differences in marketing by school level (i.e., elementary, middle and high schools); the school population's demographics; how effective school wellness policies are in covering all in-school and out-of-school marketing practices; and the effectiveness of in-school and out-of-school marketing practices on children's and adolescents' preferences, purchasing behaviors, diets and health.

Vulnerable populations. Because research on marketing practices that target high-risk populations, especially very young children, children from lower-income families, and children from communities of color is still nascent, a full range of studies is necessary. For racially and ethnically diverse populations, this research should include conducting content analyses of promotions, such as billboards, store signage, advertising in schools and in-store packaging. Research also should include analyses in the amount and density of unhealthy and healthy food and beverage outlets, and the effectiveness of marketing on children and teens from communities of color.

Studies that examine these questions can help parents better understand the impact of food and beverage marketing on their children and teens. The research can help policy-makers better understand the mix and effect of the total food and beverage marketing and media environments. Researchers also should examine, through public opinion polling and other methods, the extent to which parents and policy-makers are aware of how children and adolescents are targeted by food, beverage and restaurant companies and the effects of integrated marketing communications strategies used for foods and beverages.

Policy Implications

According to the World Health Organization, the goal of food and beverage marketing policy should be to reduce children's exposure to, and the power of marketing, which targets them with foods and beverages high in saturated fats, trans-fatty acids, free sugars or salt.⁶⁹ Governments should be the key stakeholders in developing, enforcing and evaluating these policies.⁶⁹ In the United States, the primary policy approach has been industry self-regulation. So far, however, independent research has demonstrated that the food and beverage industry's self-regulation of child-targeted advertising is insufficient because it excludes certain forms of marketing practices and addresses only the needs of children ages 12 and younger. Participants in the CFBAI have kept their pledges, and there have been some reductions in TV advertisements for certain foods and beverages, yet children are increasingly exposed to fast-food restaurant advertisements and digital marketing.

Implementing nutrition standards policies can help improve children's and adolescents' food environments. A study in Los Angeles showed that implementing policies that improve the nutritional quality of competitive foods and beverages available to students improved their health.⁷⁰ One promising effort is the federal Interagency Working Group (IWG) on Food Marketing to Children, a collaboration of the Federal Trade Commission (FTC), the Centers for Disease Control and Prevention, the Food and Drug Administration, and the U.S. Department of Agriculture created by the 2009 Omnibus Appropriations Act (Pub.L. 111-8). Congress directed the IWG to develop voluntary nutrition standards for foods and beverages marketed to children and adolescents ages 17 and younger. The report was due to Congress no later than July 15, 2010, but as of this writing, has not yet been submitted. The IWG standards are needed in order to address inconsistencies among individual company CFBAI pledges and provide clear and consistent information on what foods

and beverages qualify for marketing to children and adolescents that support a healthful diet.

The FTC is a key agency regarding food and beverage marketing to young people. Its 2008 report, “Marketing Food to Children and Adolescents: A Review of Industry Expenditures, Activities, and Self-Regulation,”¹⁹ provided crucial insights into the contemporary marketing practices and expenditures reported by 44 food, beverage and restaurant companies in 2006. The report further described how the nation’s food and beverage environments are being shaped. Congress requested that the FTC complete and submit a follow-up study by the summer of 2011, which may or may not show progress in reducing unhealthy marketing and improving industry self-regulation since the 2008 report. Future FTC monitoring should detail the newest and most innovative industry marketing practices. This should include data on children’s and adolescents’ exposures to digital food and beverage marketing. Moreover, data are needed on overall measured media expenditures aimed at all children and youth; such information should be disaggregated by income and race.

Finally, the pledges that food, beverage and restaurant companies make in different countries and regions should be standardized and modeled after guidelines that are more inclusive and comprehensive than those adopted through industry self-regulation. Such an effort could potentially help protect children and adolescents in the United States from unhealthy food and beverage environments.

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Endnotes

1. Institute of Medicine, Committee on Prevention of Obesity in Children and Youth. Preventing childhood obesity: Health in the balance. Washington, DC: The National Academies Press; 2005. Available from: <http://www.iom.edu/Reports/2004/Preventing-Childhood-Obesity-Health-in-the-Balance.aspx>. Accessed December 28, 2010.
2. Institute of Medicine, Committee on Food Marketing and the Diets of Children and Youth. Food marketing to children and youth: Threat or opportunity? Washington, DC: National Academies Press; 2006. Available from: <http://www.iom.edu/Reports/2005/Food-Marketing-to-Children-and-Youth-Threat-or-Opportunity.aspx>. Accessed December 28, 2010.
3. Obama M. Remarks by the First Lady in Address to the National Restaurant Association Meeting. 2010. Available from: <http://www.whitehouse.gov/the-press-office/2010/09/13/remarks-first-lady-address-national-restaurant-association-meeting>. Accessed November 2010.
4. Flegal KM, Carroll MD, Ogden CL, Curtin LR. Prevalence and trends in obesity among US adults, 1999–2008. *JAMA*. 2010;303(3):235–241.
5. Health consequences. Centers for Disease Control and Prevention; 2007. Available from: <http://www.cdc.gov/print.do?url=http%3A%2F%2Fwww.cdc.gov%2Fncddp%2Fdnpa%2Fobesity%2Fconsequences.htm>. Accessed March 3, 2011.
6. Williams J. Product proliferation analysis for new food and beverage products targeted to children 1994–2004. *University of Texas at Austin Working Paper*. 2005.
7. Elliott C. Assessing ‘fun foods’: Nutritional content and analysis of supermarket foods targeted at children. *Obes Rev*. 2008;9(4):368–377.
8. U.S. Department of Agriculture, U.S. Department of Health and Human Services. Dietary Guidelines for Americans, 2010. Washington, DC: Government Printing Office; 2011. Available from: <http://www.cnpp.usda.gov/DGAs2010-PolicyDocument.htm>. Accessed February 24, 2011.
9. Council of Better Business Bureaus. About the Children’s Food and Beverage Advertising Initiative. <http://www.bbb.org/us/about-children-food-beverage-advertising-initiative/>. Accessed December 7, 2010.
10. Council of Better Business Bureaus. The Children’s Food and Beverage Advertising Initiative. <http://www.bbb.org/us/children-food-beverage-advertising-initiative/>. Accessed December 7, 2010.
11. 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; 2009. Available from: http://www.childrennow.org/uploads/documents/adstudy_2009.pdf. Accessed March 3, 2011.
12. Sims J, Mikkelsen L, Gibson P. Claiming health: Front-of-package labeling of children’s food. Prevention Institute; 2011. Available from: <http://www.preventioninstitute.org/component/jlibrary/article/id-293/127.html>. Accessed March 3, 2011.
13. Larson N, Story M. Food and beverage marketing to children and adolescents: What changes are needed to promote healthy eating habits? A Research Brief. Princeton, NJ: Healthy Eating Research, a National Program of the Robert Wood Johnson Foundation; October 2008. Available from: www.healthyeatingresearch.org. Accessed December 28, 2010.
14. Rideout VJ, Foehr UG, Roberts DF. Generation M2: Media in the lives of 8- to 18-year-olds. Menlo, CA: Henry J. Kaiser Family Foundation; 2010. Available from: <http://www.kff.org/entmedia/upload/8010.pdf>. Accessed December 28, 2010.
15. Harris JL, Schwartz MB, Brownell KD, et al. Fast food F.A.C.T.S.: Evaluating fast food nutrition and marketing to youth. Connecticut: Rudd Center for Food Policy and Obesity; November 2010. Available from: http://www.fastfoodmarketing.org/media/FastFoodFACTS_Report.pdf. Accessed February 24, 2011.
16. Andreyeva T, Kelly IR. Exposure to food advertising on television, food choices and childhood obesity. 2010. Available from: http://www.iza.org/conference_files/riskonomics2010/andreyeva_15867.pdf. Accessed December 2010.
17. Harris JL, Bargh JA, Brownell KD. Priming effects of television food advertising on eating behavior. *Health Psychol*. 2009;28(4):404–413.
18. Barr-Anderson DJ, Larson NI, Nelson MC, Neumark-Sztainer D, Story M. Does television viewing predict dietary intake five years later in high school students and young adults? *Int J Behav Nutr Phys Act*. 2009;6:7.
19. Kovacic W, Harbour P, Leibowitz J, Rosch J. Marketing food to children and adolescents: A review of industry expenditures, activities, and self-regulation. Washington, DC: Federal Trade Commission; July 2008. Available from: www.ftc.gov/os/2008/07/P064504foodmktgreport.pdf. Accessed December 28, 2010.
20. Powell LM, Szczypka G, Chaloupka FJ. Trends in exposure to television food advertisements among children and adolescents in the United States. *Arch Pediatr Adolesc Med*. 2010;164(9):794–802.
21. Harris JL, Schwartz MB, Brownell KD, et al. Cereal F.A.C.T.S.: Evaluating the nutrition quality and marketing of children’s cereals. Connecticut: Rudd Center for Food Policy and Obesity; October 2009. Available from: http://www.cerealfacts.org/media/Cereal_FACTS_Report.pdf. Accessed February 24, 2011.
22. Henry AE, Story M. Food and beverage brands that market to children and adolescents on the internet: A content analysis of branded web sites. *J Nutr Educ Behav*. 2009;41(5):353–359.
23. Culp J, Bell RA, Cassady D. Characteristics of food industry web sites and “advergaming” targeting children. *J Nutr Educ Behav*. 2010;42(3):197–201.
24. 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(Suppl 3):S587–92.
25. Lee M, Choi Y, Quilliam ET, Cole RT. Playing with food: Content analysis of food advergames. *J Consumer Aff*. 2009;43(1):129–154.
26. Chester J, Montgomery K. Interactive food & beverage marketing: Targeting children and youth in the digital age. An update. Berkeley, CA: Berkeley Media Studies Group; 2008. Available from: http://digitalads.org/documents/NPLAN_digital_mktg_memo.pdf. Accessed November 2010.
27. Montgomery KC, Chester J. Interactive food and beverage marketing: Targeting adolescents in the digital age. *J Adolesc Health*. 2009;45(3 Suppl):S18–29.
28. Jain A. Temptations in Cyberspace: New battlefields in childhood obesity. *Health Aff*. 2010;29(3):425–429.
29. Molnar A, Koski WS, Boninger F. Policy and statutory response to advertising and marketing in schools. Tempe, Arizona and Boulder, Colorado: Education and Public Interest Center & Commercialism in Education Research Unit; 2010. Available from: <http://nepc.colorado.edu/publication/policy-and-statutory>. Accessed December 28, 2010.
30. Zenk SN, Powell LM. US secondary schools and food outlets. *Health Place*. 2008;14(2):336–346.
31. Zmuda N. How Coke is targeting black consumers. Advertising Age. Available from: http://adage.com/bigtent/post?article_id=137716. Accessed December 2010.
32. Nielsen Company. How teens use media: A Nielsen report on the myths and realities of teen media trends. New York: Nielsen Company; 2009.
33. Yoo CY. Unconscious processing of web advertising: Effects on implicit memory, attitude toward the brand, and consideration set. *Journal of Interactive Marketing*. 2008;22(2):2–18.
34. Cauberghe V, De Pelsmacker P. Advergaming. *J Advertising*. 2010;39(1):5–18.
35. Mallinckrodt V, Mizerski D. The effects of playing an advergame on young children’s perceptions, preferences, and requests. *J Advertising*. 2007;36(2):87–100.
36. Robinson TN, Borzekowski DL, Matheson DM, Kraemer HC. Effects of fast food branding on young children’s taste preferences. *Arch Pediatr Adolesc Med*. 2007;161(8):792–797.
37. Halford JC, Boyland EJ, Cooper GD, et al. Children’s food preferences: Effects of weight status, food type, branding and television food advertisements (commercials). *Int J Pediatr Obes*. 2007;1–8.
38. 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.
39. Powell L, Schermbeck R, Szczypka G, Chaloupka F, Braunschweig C. Nutritional content of television food advertisements seen by children and adolescents: An update. 138th APHA Annual Meeting. Presentation by Frank Chaloupka. November 8, 2010. Available from: http://www.impacteen.org/generalarea_PDFs/Powell_APHA_2010_advertising_FINAL.pdf. Accessed March 3, 2011.
40. 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):673–678.
41. National Heart Lung and Blood Institute. We Can! Ways to enhance children’s activity and nutrition. <http://www.nhlbi.nih.gov/floyd.lib.umn.edu/health/public/heart/obesity/wecan/about-wecan/index.htm>. Accessed March 3, 2011.
42. Dahl S, Eagle L, Báez C. Analyzing advergames: Active diversions or actually deception. An exploratory study of online advergames content. *Young Consumers*. 2009;10(1):46–59.
43. Institute of Medicine. Nutrition standards for foods in schools: Leading the way toward healthier youth. Washington, DC: National Academies Press; 2007. Available from: <http://www.iom.edu/CMS/3788/30181/42502.aspx>. Accessed March 3, 2011.
44. U.S. Department of Health and Human Services, U.S. Department of Agriculture. Dietary Guidelines for Americans, 2005. Washington, DC: Government Printing Office; 2005. Available from: <http://www.health.gov/dietaryguidelines/dga2005/document/>. Accessed February 24, 2011.

45. Lukovitz K. General Mills focuses on marketing efficiency. *MediaPost News*. November 18, 2010. Available from: http://www.mediapost.com/publications/?fa=Articles.showArticle&art_id=139751. Accessed November 2010.
46. Molnar A, Garcia DR, Boninger F, Merrill B. Marketing of foods of minimal nutritional value to children in schools. *Prev Med*. 2008;47(5):504–507.
47. Fox MK, Gordon A, Nogales R, Wilson A. Availability and consumption of competitive foods in US public schools. *J Am Diet Assoc*. 2009;109(2):S57–S66.
48. Turner L, Chaloupka FJ, Chiqui JF, Sandoval A. School policies and practices to improve health and prevent obesity: National elementary school survey results: School years 2006–07 and 2007–08. Chicago, IL: Bridging the Gap Program, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago; 2010;1. Available from: www.bridgingthegapresearch.org. Accessed December 28, 2010.
49. Story M, Nannery MS, Schwartz MB. Schools and obesity prevention: Creating school environments and policies to promote healthy eating and physical activity. *Milbank Q*. 2009;87(1):71–100.
50. Johnson DB, Bruemmer B, Lund AE, Evens CC, Mar CM. Impact of school district sugar-sweetened beverage policies on student beverage exposure and consumption in middle schools. *J Adolesc Health*. 2009;45(3 Suppl):S30–7.
51. Fox MK, Dodd AH, Wilson A, Gleason PM. Association between school food environment and practices and body mass index of US public school children. *J Am Diet Assoc*. 2009;109(2 Suppl):S108–17.
52. Terry-McElrath YM, O'Malley PM, Delva J, Johnston LD. The school food environment and student body mass index and food consumption: 2004 to 2007 national data. *J Adolesc Health*. 2009;45(3 Suppl):S45–56.
53. Fox MK. Improving food environments in schools: Tracking progress. *J Am Diet Assoc*. 2010;110(7):1010–1013.
54. Kakarala M, Keast DR, Hoerr S. Schoolchildren's consumption of competitive foods and beverages, excluding à la carte. *J Sch Health*. 2010;80(9):429–435.
55. Harris JL, Schwartz MB, Brownell KD. Marketing foods to children and adolescents: Licensed characters and other promotions on packaged foods in the supermarket. *Public Health Nutr*. 2010;13(3):409–17.
56. Schwartz MB, Vartanian LR, Wharton CM, Brownell KD. Examining the nutritional quality of breakfast cereals marketed to children. *J Am Diet Assoc*. 2008;108(4):702–705.
57. Kids can choose what they want. Wendy's Corporation. http://www.wendys.com/kids_meal/family.jsp. Accessed March 3, 2011.
58. Yum! Brands 2010 Corporate Social Responsibility Report. Yum! Brands Corporation. <http://www.yum.com/csr/food/nutrition/kib.asp>. Accessed March 3, 2011.
59. Kolish E, Peeler C. Changing the landscape of food and 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 Better Business Bureaus, Inc.; 2008. Available from: <http://www.bbb.org/us/storage/0/Shared%20Documents/CFBAI%20Report.pdf>. Accessed February 24, 2011.
60. Peeler CL, Kolish ED, Enright M. The Children's Food and Beverage Advertising Initiative in action. A report on compliance and implementation during 2008. Arlington, VA: Council of Better Business Bureaus, Inc.; 2009. Available from: <http://www.bbb.org/us/storage/0/Shared%20Documents/finalbbbs.pdf>. Accessed March 3, 2011.
61. Peeler CL, Kolish ED, Enright M, Burke C. The Children's Food and Beverage Advertising Initiative in action: A report on compliance and implementation during 2009. Arlington, VA: Council of Better Business Bureaus, Inc.; 2010. Available from: <http://www.bbb.org/us/storage/0/Shared%20Documents/BBBwithlinks.pdf>. Accessed February 24, 2011.
62. Currie J, Della Vigna S, Moretti E, Pathania V. The effect of fast food restaurants on obesity and weight gain. *American Economic Journal: Economic Policy*. 2010;2(3):32–63.
63. Delva J, O'Malley PM, Johnston LD. Availability of more-healthy and less-healthy food choices in American schools: A national study of grade, racial/ethnic, and socioeconomic differences. *Am J Prev Med*. 2007;33(4 Suppl 1):S226–39.
64. Powell LM, Chaloupka FJ, Bao Y. The availability of fast-food and full-service restaurants in the United States: Associations with neighborhood characteristics. *Am J Prev Med*. 2007;33(4 Suppl):S240–5.
65. Rich L. Shiny new things: What digital adopters want. *Advertising Age*. March 2010. Available from: http://adage.com/images/bin/pdf/shiny_new_things.pdf. Accessed November 2010.
66. Grier S. African-American and Hispanic youth vulnerability to target marketing: Implications for understanding the effects of digital marketing. Memo prepared for the second NPLAN/BMSG meeting on digital media and marketing to children, Berkeley, CA. June 2009. Available from: <http://digitalads.org/documents/Grier%20NPLAN%20BMSG%20memo.pdf>. Accessed November 2009.
67. Yancey AK, Cole BL, Brown R, et al. A cross-sectional prevalence study of ethnically targeted and general audience outdoor obesity-related advertising. *Milbank Q*. 2009;87(1):155–184.
68. Li F, Harmer P, Cardinal BJ, Bosworth M, Johnson-Shelton D. Obesity and the built environment: Does the density of neighborhood fast-food outlets matter? *Am J Health Promot*. 2009;23(3):203–209.
69. World Health Organization. Set of recommendations on the marketing of foods and non-alcoholic beverages to children. 2010. Available from: http://whqlibdoc.who.int/publications/2010/9789241500210_eng.pdf. Accessed December 2010.
70. Sanchez-Vaznaugh EV, Sanchez BN, Baek J, Crawford PB. 'Competitive' food and beverage policies: Are they influencing childhood overweight trends? *Health Aff*. 2010;29(3):436–446.

About Healthy Eating Research

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