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Food Advertising to Children and Teens Score

2012

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Limited progress in the nutrition quality and marketing of children's cereals



YALE RUDD CENTER
FOR FOOD POLICY & OBESITY

Cereal FACTS 2012: Limited progress in the nutrition quality and marketing of children's cereals

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In 2009, a report from the Rudd Center for Food Policy & Obesity at Yale University, Cereal FACTS, documented the nutrition quality and marketing of cereals to children.¹ Three years later – using the same methods as the first report – Cereal FACTS 2012 quantifies changes in nutrition and children's exposure to marketing for children's cereals.

The results of the first report were striking. Cereal products marketed to children contained 85% more sugar, 65% less fiber, and 60% more sodium than products marketed to adults. Due to their poor nutritional profiles, not one child-targeted product could be advertised to children on TV in the United Kingdom, and not one qualified to be included in the U.S. Department of Agriculture (USDA) Women, Infants and Children (WIC) program.

In addition, children saw more advertising for cereals than for any other food or beverage product. Preschoolers, on average, were exposed to 635 cereal ads on TV in 2008, or 1.7 ads *every day*. Cereal companies also targeted children on the internet with engaging websites containing advergames and other branded activities. The most popular site, Millsberry.com, attracted 387,000 children every month who averaged 24 minutes there each visit. Banner advertising placed on other children's websites and promotions on cereal boxes encouraged children to visit cereal company sites. General Mills and Kellogg led in child-targeted marketing, despite their participation in the Children's Food and Beverage Advertising Initiative (CFBAI), the food industry self-regulatory program launched in 2006 to improve the landscape of child-directed advertising.²

The first Cereal FACTS recommended that General Mills, Kellogg, and Post help improve children's diets and health by substantially reducing marketing of their least nutritious products to children and finding creative ways to encourage children to consume the healthful products in their portfolios.

Since that report was published, cereal companies have promised to do more. Post joined the CFBAI in 2009, and CFBAI progress reports state that General Mills, Kellogg, and Post have enhanced the nutritional profile of products advertised to kids and complied with strengthened and expanded CFBAI core principles.³ But have these changes improved the unhealthy food marketing environment that surrounds children?

In light of conflicting reports about the success of industry self-regulation and the nutritional quality of cereals marketed to children, objective and transparent data are necessary. The findings presented in this report document limited progress in the nutrition and marketing of children's cereals.

Methods

Cereal FACTS presents a comprehensive and independent science-based evaluation of cereal-company marketing to children and adolescents from 2008 through early 2012. We distinguish between brands marketed directly to children (i.e., child brands); those marketed to parents as appropriate to feed their children and/or families (i.e., family brands); and those marketed to adults for adult consumption only (i.e., adult brands).

We evaluated the nutrient content of 261 ready-to-eat cereals offered by 12 companies in the United States as of May 2012; compared the quality of child, family, and adult brands; and evaluated changes in product nutrition versus 2009 and 2006. We utilized an overall Nutrition Profiling Index (NPI) score based on the nutrient profiling system used in the United Kingdom to identify healthy foods that can be advertised to children on television.

To quantify cereal company marketing practices, we evaluated media spending, TV advertising, and marketing on the internet, including cereal company-sponsored websites, advertising on third-party youth websites, and social media. To document young people's exposure to advertising for individual brands on TV and the internet, we licensed syndicated media research data from Nielsen and comScore.

Changes for the better

From 2009 to 2012, cereal companies improved the nutrition of most cereals marketed directly to children. Overall nutritional quality improved for 13 of 16 child-targeted brands, and the average nutrition score for children's cereals improved from 40 out of 100 in 2009 to 43 in 2012. Of the 22 different varieties of child-targeted cereals available in both 2008 and 2011, ten (45%) reduced the sodium, seven (32%) reduced sugar, and five (23%) increased fiber. General Mills improved all of its child-targeted cereals. Companies also introduced new varieties of children's brands with somewhat improved nutrition scores, such as Pebbles Boulders and Gluten Free Rice Krispies.

Cereal companies also reduced some forms of advertising directed to children. Most significantly, General Mills and Post discontinued their popular children's advergame websites: Millsberry.com and Postopia.com. As a result, children's exposure to cereal company-sponsored websites declined by an estimated 100 ads per year, on average. In addition, General Mills banner advertising on third-party children's websites, such as Nick.com and Disney.com, went down by 43%. Cap'n Crunch and Envirokidz Organic also discontinued their child-targeted websites.

On TV, preschoolers' exposure to ads for all cereals declined by 6%, and their exposure to ads for child-targeted cereals decreased by 8%. Among 6- to 11-year-olds, TV ad exposure declined for seven child-targeted cereals, including reductions of 66% to 67% for Kellogg Apple Jacks and Corn Pops and 16% for General Mills Cookie Crisp. Post stopped advertising Honeycomb on TV.

Changes for the worse

At the same time, cereal companies increased advertising to children for many of their least nutritious products. Children's exposure to TV ads increased from 2008 to 2011 for seven child-targeted cereals, including Kellogg Froot Loops (+79%); General Mills Reese's Puffs (+55%) and Trix (+29%); and Post Pebbles (+25%). Total exposure to TV advertising for General Mills child and family brands increased by 10% for preschoolers and by 16% for 6- to 11-year-olds.

Cereal companies also launched new child-targeted websites and increased banner advertising on third-party children's websites for individual brands and existing websites. Post introduced PebblesPlay.com to replace Postopia.com, and General Mills launched new sites for Honey Nut Cheerios (HoneyDefender.com) and Cinnamon Toast Crunch (CrazySquares.com). The number of child visitors to cereal company-sponsored children's websites increased for eight of ten cereal sites that existed in 2008. In addition, banner advertising for Kellogg child brands nearly doubled; General Mills increased banner advertising for Honey Nut Cheerios (+185%) and Lucky Charms (+58%) and began advertising Cinnamon Toast Crunch; and banner advertising doubled for Post Pebbles.

Media spending to promote child-targeted cereals totaled \$264 million in 2011, an increase of 34% versus 2008. Companies spent more to advertise children's cereals than they spent on adult cereals; whereas in 2008, they had spent 41% more on adult cereals. Adolescents also saw more TV ads for these products in 2011 as in 2008, including 35% more ads for General Mills children's cereals. In addition, companies increased advertising spending for child and family brands in magazines (+73%) and the internet (+31%).

Finally, black and Hispanic children's exposure to cereal advertising increased from 2008 to 2011. Despite an overall decline in TV ads targeting children, black children's exposure to these ads increased by 8%, with the biggest increases for Kellogg Froot Loops (+88%) and General Mills Reese's Puffs (+72%). In addition, advertising spending on Spanish-language TV more than doubled from \$26 million to \$65 million. Hispanic preschoolers saw, on average, 90 Spanish-language TV ads for cereals in 2011 (in addition to ads on English TV). Kellogg and General Mills launched new Spanish-language TV campaigns for seven brands, including Froot Loops and Cinnamon Toast Crunch.

More of the same

The net effect of these changes is that cereal marketing to children in 2012 looks much the same as it did in 2009. Despite improvements in nutritional quality, the cereals advertised to children contain 56% more sugar, 52% less fiber, and 50% more sodium compared with adult-targeted cereals. Companies do offer more nutritious and lower-sugar cereals for children. For example, regular Cheerios and Frosted Mini-Wheats have some of the highest nutrition scores. However, these products are marketed to parents, not directly to children. Companies' most nutritious products are marketed to adults for their own consumption.

In addition, children continue to see more ads on TV for ready-to-eat cereals than any other category of packaged food or beverage.⁴ In 2011, 6- to 11-year-olds saw more than 700 TV ads for cereals on average (1.9 ads per day), and preschoolers (2-5 years) saw 595 ads (1.6 per day). Children (6-11 years) also saw 53% more cereal ads than adults saw. Almost one-half (45%) of TV ads seen by children promoted five brands: General Mills Cinnamon Toast Crunch, Honey Nut Cheerios, Lucky Charms, and Reese's Puffs; and Kellogg Froot Loops. On the internet, child-targeted websites remained popular with children. Four advergame sites (AppleJacks.com, CornPops.com, FrootLoops.com, and HoneyDefender.com) averaged more than 100,000 unique child visitors per month during at least one quarter of 2011.

The bottom line is that General Mills, Kellogg, and Post continue to aggressively target children with advertising for cereals such as Reese's Puffs, Froot Loops, and Pebbles that rank at the bottom of their products in nutrition and at the top in added sugar. The majority of cereal ads seen by children on TV (53%) promote products consisting of one-third or more sugar. One 30-gram serving of these cereals contains as much sugar as 30 grams of Chips Ahoy cookies (3 cookies). Just 12% of cereal ads seen by children promote products with 26% or less sugar, compared with 48% of ads seen by adults. The top-10 list of cereals advertised to children in Cereal FACTS 2012 is nearly identical to the top-10 list in the first Cereal FACTS. These cereals are not nutritious foods that companies should encourage children to consume.

Signs of things to come?

This research also uncovered some new developments in the marketing of children's cereals. Cereal companies have begun to introduce new technologically sophisticated forms of child-targeted marketing. In 2011, Kellogg launched a mobile version of its "Race to the Bowl Rally" game from AppleJacks.com, the first food company child-targeted advergame app for smartphones and tablets.⁵ General Mills also tested Quick Response (QR) codes on Honey Nut Cheerios packages to creative "visual surprises" for children on cereal boxes.⁶ In addition, General Mills, Kellogg, and

Post have each launched a campaign to convince parents of the nutritional benefits of children's cereals. Tag lines such as "Give your kids more of what they need to do their best. Grow up strong with Big G kids' cereals." and "Kellogg makes Fiber fun!" imply that high-sugar cereals are healthy options for children.

Kellogg also introduced Krave cereal in 2012, a product that appears to be targeted to "tweens." The company does not list Krave as a product that may be in child-directed advertising.⁷ However, children (6-11 years) saw more TV ads for Krave during the first quarter of 2012 than individuals in any other age group: 11.2 ads, versus 10.6 for adolescents (12-17 years) and 4.9 for adults (18-49 years). These ads appeared during programs such as "SpongeBob," "Adventure Time," and "Victorious" that do not qualify as advertising "primarily directed to children" according to industry self-regulation.⁸ Within a few months, Krave also became one of the most popular cereal Facebook pages. From January through March, Krave's Facebook page averaged 157,000 unique visitors each month, and 24% of them were children 6-14 years old.⁹ QR codes on boxes of Krave connected children directly to its Facebook page.

Recommendations

Cereal companies have expressed a commitment to foster public health and be part of the solution to childhood obesity. However, they cannot do so by making incremental improvements in the sugar and sodium content of children's cereals, while continuing to aggressively market their least nutritious cereals to children as young as two years old. Cereals that contain one spoonful of sugar in every three spoons of cereal are not healthful products that children should regularly consume.

In the first Cereal FACTS report, we recommended that companies replace advertising to children for high-sugar cereals with advertising for the nutritious products in their portfolios. Our question remains, why don't cereal companies market Frosted Mini-Wheats or regular Cheerios directly to children using cartoon characters and fun, cool themes? It may increase corporate profits to convince children that they must have Reese's Puffs or Froot Loops, but why is it acceptable?

If General Mills, Kellogg, and Post truly want to help parents raise healthy children, they must:

- Significantly reduce the hundreds of advertisements for high-sugar cereals that children see every year; and
- Use their substantial resources and creativity to find ways to encourage children to consume the healthful products in their portfolios.

We urge them to do the right thing for children's health.

In 2009, The Rudd Center for Food Policy & Obesity at Yale University issued *Cereal FACTS*. The report quantified the nutritional quality of cereals marketed – and not marketed – to children, as well as the full array of practices commonly used to promote these cereals to children and their parents in 2008 and early 2009.¹

The results were striking. Cereal companies aggressively marketed their least nutritious products to children. The companies did offer healthier products for children, but they were marketed to parents. The most nutritious cereals, however, were targeted to adults for their own consumption.

Key findings from the 2009 *Cereal FACTS* report:

- Of the 115 brands of cereals evaluated, 19 brands were marketed directly to children, and 27 were marketed to parents as appropriate to feed children.
- Compared to adult cereals, those marketed to children contained 85% more sugar, 65% less fiber, and 60% more sodium.
- Although the majority of children's cereals qualified as “better for you” according to the Children's Food and Beverage Advertising Initiative (CFBAI) – the food industry's self-regulatory program – they did not meet independent standards for healthful products that should be marketed to children. Not one could be offered in the U.S. Department of Agriculture (USDA) Women, Infants and Children (WIC) supplemental foods program, and not one could be advertised to children on TV in the United Kingdom.
- Three companies – General Mills, Kellogg, and Post – spent \$156 million per year in advertising for children's cereals.
- The average 6- to 11-year-old viewed 721 cereal ads on TV in 2008 and the average 2- to 5-year-old viewed 642 – in spite of pledges by General Mills and Kellogg that they would not advertise to young children. The majority of cereal ads viewed by children (78-79%) promoted child-targeted cereals, and children saw 5.4 times as many of these ads as adults saw.
- Cereal companies sponsored 17 different websites with child-targeted content, including advergames and other interactive features to engage children with the brands. Six of these sites – Millsberry.com, Postopia.com, AppleJacks.com, FrootLoops.com, ReesesPuffs.com, and CornPops.com – averaged more than 20,000 unique child visitors per month. One website, Millsberry.com, attracted more than 386,000 unique children on average 2.8 times each month, and they spent 24 minutes on the site per visit.
- Cereal companies also used highly engaging banner ads placed on third-party children's websites – including Nick.com, Neopets.com, CartoonNetwork.com and Disney.com – to attract children to cereal company-sponsored websites. On average, 222 million of these banner ads were viewed on children's websites each month.

Further studies documented the effects of these marketing practices.

- An experiment examined the effect of serving high-sugar cereals on the nutritional quality of children's breakfast.² Children who were served low-sugar cereals consumed slightly more than one serving of cereal on average (35 g), whereas children consumed more than two servings (61 g) when served high-sugar varieties. Children who ate the high-sugar cereals also consumed almost twice as much refined sugar, even though children could add table sugar to the low-sugar cereals. Milk and total calories consumed did not differ, but children who ate low-sugar cereals were more likely to put fruit on their cereal. All children reported “liking” or “loving” both the low- and high-sugar cereals they chose.
- An evaluation of cereal product sales quantified the relationship between advertising and sales for different target audiences. U.S. households purchased cereals that were advertised directly to children thirteen times more frequently than non-advertised cereals.³ Purchases of family-targeted advertised brands were ten times higher than non-advertised brands, and cereals advertised to adults were purchased just four times more frequently.
- A survey of parents demonstrated that the majority misinterpret the meaning of nutrition-related claims, such as “whole grains,” “fiber,” and “good source of calcium and vitamin D,” that are commonly placed on packages for high-sugar cereals.⁴ Such claims lead parents to infer that these cereals are more nutritious than other cereals and provide health benefits for their children, including growing strong bones and making up for low fruit and vegetable consumption. Parents also indicate that they are more likely to buy cereals that feature these claims.

Food industry actions

Cereal companies have promised to improve their children's products.

- In October 2009, Post joined the CFBAI and pledged to “participate in changing the nutritional profile of food and beverage products advertised to children.”⁵
- In December 2009, General Mills announced that it would “reduce to single-digit levels of sugar per serving every cereal advertised to children under 12.”⁶ The company also vowed that it “strives to be the health leader in every category in which we compete – and we are committed to leading in the cereal category.”⁷
- In December 2010, Post followed with an announcement that it would lower the sugar content of Pebbles cereals to 9 grams per serving, beginning in January 2011.⁸

- In July 2011, Kellogg stated that it was focusing approximately 50% of its ready-to-eat cereal research and development resources on improving the nutritional benefits of cereals advertised to children.⁹

In 2010 the CFBAI also implemented changes in core advertising principles and standards for all participating companies.¹⁰

- All participating companies committed that “100% of their child-directed advertising would be for healthier products.”
- The CFBAI definition of child-directed advertising was expanded to include “advertising on video and computer games rated EC or Early Childhood, other video games that are age-graded on the label as being primarily child-directed, cell phone or PDA marketing that is primarily directed to children under 12,” as well as word-of-mouth advertising “primarily directed to children under 12.”
- All participants committed to a definition of “advertising primarily directed to children under 12” as advertising in media with more than 35% children (2-11 years) in the audience (or a stricter definition).

In July 2011, the CFBAI also announced that participating companies had agreed to new category-specific nutrition criteria to go into effect by December 31, 2013.¹¹ According to the CFBAI, these new criteria will require companies to reformulate approximately one-third of the products advertised to children.¹²

Questions about industry-initiated improvements

In contrast to industry reports of improvements in the children’s food advertising landscape,¹³ evaluations by non-industry researchers demonstrate limited progress. For example, an analysis of children’s exposure to all food and beverage advertising on TV conducted by the Rudd Center showed that children viewed 7.5% *more ads* for cereals in 2010 compared with 2008.¹⁴ In addition, Powell and colleagues from the University of Illinois at Chicago reported that 94% of cereal products that appeared in TV ads viewed by children in 2009 were high in saturated fat, sugar and/or sodium, down slightly from 97% in 2007.¹⁵ In a December 2011 analysis of the sugar content of children’s cereal, the Environmental Working Group, a non-profit research organization, reported that 54 of 84 cereals reviewed consisted of more than 26% sugar.¹⁶

In an effort to encourage “stronger and more meaningful self-regulation,” the U.S. Congress commissioned an Interagency Working Group (IWG) of four U.S. federal agencies (Centers for Disease Control and Prevention [CDC], Federal Drug Administration [FDA], Federal Trade Commission [FTC], and USDA) to develop a set of voluntary standards on marketing to children.¹⁷ The proposed nutrition standards called for reductions of sugar in children’s cereals to 26% or less by

weight (<8 g per 30-g serving) and an interim limit on sodium of 210 mg per 50-g serving, as well as limits on saturated and trans fats and a requirement that products contain a meaningful contribution of whole grains.¹⁸ Proposed marketing standards included expanded definitions of child-targeted advertising and inclusion of additional types of child-directed marketing, such as packaging and point-of-purchase displays in stores, character licensing and other cross-promotions, in-school marketing, and event and sports sponsorships.¹⁹

The proposed IWG voluntary principles for marketing food to children were released for public comment in April 2011.²⁰ Food industry comments expressed strong objections. General Mills called the nutrition standards “arbitrary, capricious, and fundamentally flawed” and claimed, “Literally all cereals marketed by General Mills would be barred from advertising – even cereals like Cheerios.”²¹ Kellogg responded, “Government-established criteria are unnecessary given the compliance and results industry has collectively shown thus far through self-regulatory pledges.”²² The CFBAI commented that “the IWG’s specific goals for nutrients to limit and for food groups to include exceed what reasonably can be accomplished within five years.”²³ Food and beverage groups have also spent a reported \$175 million in federal lobbying since 2009.²⁴ In spite of widespread support from consumer and public health organizations and more than 28,000 write-in comments in favor of the IWG proposal (out of 29,000 in total),²⁵ the Commissioner of the FTC reported in March 2012 that the IWG standards were no longer an agency priority.²⁶

Measuring progress

In light of conflicting reports about the success of industry self-regulation and the nutritional quality of cereals marketed to children, objective and transparent data are necessary. The purpose of this report is to quantify improvements reported by cereal companies and the CFBAI. Using the same methods as the first Cereal FACTS, we identify the cereals marketed directly to children in 2011 (three years later), report and evaluate their nutritional quality and changes in nutrition since 2009, and measure changes in children’s exposure to cereal advertising on TV and the internet (including cereal company-sponsored websites, banner advertising on other third-party children’s websites, and social media) from 2008 to 2011.

Cereal companies have expressed a commitment to be part of the solution to combat childhood obesity and foster public health.²⁷ In our previous report, we urged General Mills, Kellogg, and Post to help improve children’s diet and health by substantially reducing marketing of their least nutritious products directly to children and finding creative ways to encourage children to consume the healthful products in their portfolios. The findings in this report document cereal companies’ progress in contributing to these critical public health objectives.

Overview of cereal market

Cereal market	Definitions
Company	Company name indicated on the cereal package, including companies or divisions owned by a separate parent company (e.g., Quaker and Kashi are listed as companies).
Brand	Marketing unit for a family of cereals (e.g., Fruity and Cocoa Pebbles belong to the Pebbles brand).
Cereal	Individual cereal or variety (e.g., Fruity and Cocoa Pebbles are listed as separate cereals).
Child brand	A brand that is marketed directly to children.
Family brand	A brand that is not marketed directly to children, but is suggested for child or family consumption in marketing communications, including TV ads, websites, and/or product packaging.
Adult brand	A brand that is only marketed to adults for adult consumption and contains no marketing references to child or family consumption.

We analyzed data for 12 companies, 124 brands and 261 cereals. Store and other generic brands (e.g., Malt-O-Meal) and foreign brands (e.g., Nestle, Dorset) were not included. General Mills had 24 brands, followed by Kellogg with 23 and Post with 13. These three companies comprised 54% of all brands and 56% of cereals examined. Barbara's Bakery, Cascadian Farm (owned by General Mills), Kashi (owned by Kellogg), Nature's Path, and Quaker (owned by PepsiCo) also had five or more cereal brands each. Additional companies in the analysis include Annie's, Newman's Own, Peace Cereal, and Uncle Sam.

The majority of cereals (59%) were marketed only to adults for adult consumption. We identified 16 brands marketed directly to children (i.e., child brands; 11% of all individual cereals) and 30 additional family brands (30% of cereals) (see **Tables 1** and **2**). General Mills promoted the most child

and family brands (eight brands each), followed by Kellogg (five child and three family brands), and Post (two child and four family brands). Cascadian Farm also offered one child brand, and Cascadian Farm, Quaker, Nature's Path, Kashi, Barbara's Bakery, and Annie's offered at least one family brand.

Most child brands were classified as such because they advertised directly to children on TV in 2011. However, Kellogg Rice and Cocoa Krispies qualified for child-targeted games on the Rice Krispies website, and two brands qualified because of tie-ins with licensed characters (Cascadian Farm Clifford Crunch and General Mills Dora the Explorer).

Family brands were classified according to content on the company website and/or product packaging indicating that the cereal was for family or child consumption. Several of

Table 1. Child brands

Company	Brand	2008	2011	CFBAI approved*	
Cascadian Farm	Clifford Crunch	✓	✓		
General Mills	Cinnamon Toast Crunch	✓	✓	✓	
	Cocoa Puffs	✓	✓	✓	
	Cookie Crisp	✓	✓		
	Dora the Explorer	✓	✓		
	Honey Nut Cheerios	✓	✓	✓	
	Lucky Charms	✓	✓	✓	
	Reese's Puffs	✓	✓	✓	
	Trix	✓	✓	✓	
	Kellogg	Apple Jacks	✓	✓	✓
		Corn Pops	✓	✓	✓
Froot Loops		✓	✓	✓	
Frosted Flakes		✓	✓	✓	
Rice and Cocoa Krispies		✓	✓	✓**	
Disney High School Musical		✓			
Hannah Montana		✓			
Post	Honeycomb	✓	✓	✓	
	Pebbles	✓	✓	✓	

*September 2011

**Only Rice Krispies was an approved CFBAI product

Table 2. Family brands

Company	Brand	2008	2011	CFBAI approved*
Annie's	Bunnies	✓	✓	
Barbara's Bakery	Puffins Puffs (formerly Organic Wild Puffs)	✓	✓	
	Puffins	✓	✓	
	Shredded Oats - Cinnamon Crunch	✓	✓	
Cascadian Farm	Cinnamon Crunch	✓	✓	
	Honey Nut O's	✓	✓	
	Purely O's	✓	✓	
	Chocolate O's		✓	
	Fruitful O's		✓	
General Mills	Boo Berry (seasonal)	✓	✓	
	Cheerios (regular)	✓	✓	
	Cheerios (except regular and Honey Nut)	✓	✓	
	Chex	✓	✓	
	Count Chocula (seasonal)	✓	✓	
	Franken Berry (seasonal)	✓	✓	
	Golden Grahams	✓	✓	
	Kix	✓	✓	
	Kaboom	✓		
	Health Valley	Blast-ems	✓	
Kashi	Golden Goodness		✓	
	Kashi Squares (formerly Honey Sunshine)	✓	✓	
	Mighty Bites	✓		
Kellogg	Honey Smacks	✓	✓	
	Mini-Swirlz	✓		
	Mini-Wheats	✓	✓	
	Smorz	✓	✓	
	Cookie Crunch	✓		
Nature's Path	Envirokidz Organic	✓	✓	
Post	Alpha Bits	✓	✓	✓
	Golden Crisp	✓	✓	
	Raisin Bran	✓	✓	
	Waffle Crisp	✓	✓	
Quaker	Cap'n Crunch	✓	✓	
	Life	✓	✓	
	Life Crunchtime		✓	

*September 2011

the family brands had been marketed directly to children previously, but we found no evidence that they were marketed to children in 2011 (e.g., General Mills Boo Berry and Count Chocula; Kellogg Honey Smacks and Smorz; and Quaker Cap'n Crunch).

Changes since 2008

With a few exceptions, the child and family brands that existed in 2008 remained in 2011 (see **Tables 1** and **2**). General Mills discontinued one brand: Kaboom, its circus-themed cereal targeted to families. Kellogg discontinued four brands, including its Disney-themed cereals (High School Musical and Hannah Montana) and two family-

targeted brands, Cookie Crunch and Mini-Swirlz. Several of the smaller companies also added new family brands, including Cascadian Farm Chocolate O's and Fruitful O's; Quaker Life Crunchtime; and Kashi Golden Goodness. In addition, Kashi discontinued Mighty Bites, and Health Valley discontinued Blast-ems. Rice and Cocoa Krispies was reclassified as a child brand due to the addition of games for children on the Rice Krispies website. In contrast, Cap'n Crunch was reclassified as a family brand because the child-directed website noted in 2008 was replaced by an adult-targeted site.

Table 3 shows new varieties of existing brands introduced since the previous Cereal FACTS report. General Mills introduced three new varieties of child brands: Cocoa

Table 3. New varieties of child and family brands*

Company	Cereal brand	New variety	Child brand	Family brand	
Annie's	Annie's	Cinnamon Roll Bunny O's		✓	
		Organic Bunny O's		✓	
Barbara's Bakery	Puffins	Peanut Butter and Chocolate		✓	
		Multigrain		✓	
General Mills	Cheerios	Cinnamon Burst		✓	
		Chocolate		✓	
		Gluten Free		✓	
		Chex	Gluten Free		✓
		Cinnamon Toast Crunch	Frosted Toast Crunch	✓	
		Cocoa Puffs	Brownie Crunch	✓	
		Cookie Crisp	Sprinkles	✓	
Kashi	Kashi Squares	Berry Blossoms		✓	
Kellogg	Mini-Wheats	Frosted/Mixed Berry		✓	
		Little Bites - Cinnamon Roll		✓	
		Little Bites - Frosted/Original		✓	
		Gluten Free	✓		
Post	Pebbles	Boulders	✓		
		Marshmallow	✓		
		Chocolatey Crunch		✓	
Quaker	Cap'n Crunch	Chocolatey Crunch		✓	
		OOPS! All Berries		✓	

*Cereals introduced after 2008 that were still available in May 2012

Puffs Brownie Crunch, Cookie Crisp Sprinkles, and Frosted Toast Crunch (a variety of Cinnamon Toast Crunch). Post also introduced two new varieties of Pebbles, and Kellogg introduced Gluten Free Rice Krispies. New family varieties were more prevalent, including such additions as General Mills Chocolate Cheerios and Quaker Cap'n Crunch OOPS! All Berries.

As of September 2011,¹ 21 cereals were included on the list of products approved to advertise to children by companies in the Children's Food and Beverage Advertising Initiative

(CFBAI) (see **Tables 1** and **2**); a decline from 41 cereals in 2009.² Post joined the CFBAI in 2009 and its Pebbles, Honeycomb, and Alpha Bits brands were approved for child-directed advertising, but no new General Mills or Kellogg brands were added to the list. In addition to discontinued brands and varieties, several brands that had been approved by the CFBAI in 2009 were removed, including Kellogg Mini-Wheats, Eggo, and Mini-Swirls; General Mills Cookie Crisp; and Quaker Cap'n Crunch. Kellogg included Rice Krispies, but not Cocoa Krispies or other Rice Krispies varieties, in its 2011 list of approved products.

Cereal nutrition quality

Cereal nutrition quality	Definitions
Nutrient Profiling Index (NPI) score	A measure of overall nutrition quality that takes into account both positive and negative nutrients in foods. Scores range from 0 (very poor) to 100 (excellent). This scoring system is based on a model developed by researchers in the United Kingdom for use in the Office of Communication's (OFCOM) guidelines to prohibit junk food advertising to children.
Women, Infants and Children (WIC) guidelines	Guidelines established by the U.S. Department of Agriculture (USDA) to specify products that individual states may include in their supplemental food packages for mothers, infants and children under 5 years. WIC-approved cereals must contain no more than 21.2% of total weight in sugar.
U.K. advertising guidelines	The United Kingdom banned TV advertising to children for food products with an NPI score of less than 64.
CFBAI-approved	Products that CFBAI participating companies designate may be included in child-directed advertising. These products must meet nutrition criteria that individual companies establish.
Interagency Working Group (IWG) guidelines for foods marketed to children	Guidelines recommended by the Federal Trade Commission (FTC), the Food and Drug Administration (FDA), the Centers for Disease Control and Prevention (CDC), and the USDA for determining foods that are appropriate to market to children and adolescents. Limits include no more than 13 grams added sugar and 210 milligrams sodium per 50 grams of cereal, as well as no more than 1 gram saturated fat and 0 grams trans fat per reference amount customarily consumed (RACC).
Product reformulation	Revisions made to the nutrition content of existing cereals after May 31, 2009.
New cereal brands	New cereal products introduced after January 1, 2009, independent of previously existing brands.
New cereal varieties	New products introduced after January 1, 2009 that are extensions of previously existing brands.

We reviewed the nutrition content of 29 child cereals, 79 family cereals, and 153 adult cereals, and compared the current nutritional make-up of the products to nutrition content as reported in the previous Cereal FACTS report. Appendix C (**Table C1**) provides nutrition data for all varieties of child and family brands. **Ranking Table 1** ranks the 43 child and family brands in our analysis (excluding seasonal brands) by average brand NPI score. The majority of brands, including 13 of 16 child brands and 13 of 22 family brands, improved their average nutrition scores from 2009. Overall nutrition scores improved at the company level as well, with Kellogg exhibiting the greatest improvement (+18%). Just one company, Post, had a decline in average NPI score (-11%).

As in 2009, family brands tended to be more nutritious (17 of the top 20 child and family brands) while child brands were the least nutritious (14 of the bottom 20). Kellogg Mini-Wheats retained its top spot with an NPI score of 73. Quaker Cap'n Crunch fell below General Mills Reese's Puffs as the worst-ranking brand, with an average NPI score of 31. Post Pebbles followed closely as the second-worst brand with a score of 33. The 10 worst brands in 2012 were the same ones found in 2009, although the order shifted somewhat. General Mills Dora the Explorer and Cascadian Farm Clifford Crunch tied for the best child brands, with NPI scores of 52.

Although family cereals had better nutrition content than cereals marketed directly to children, cereals that were marketed to adults for adult consumption remained the best

nutritionally (see **Table 4**). On average, child brands in 2012 had an NPI score of 43 and contained 33% sugar, 5.1% fiber, and 525 mg of sodium (per 100 mg). Child brands contained 56% more sugar, 52% less fiber, and 50% more sodium than adult brands. Of the three large cereal companies, Kellogg child brands had the highest average nutrition scores (46) and Post had the lowest (34). The top three companies had comparable amounts of sugar in their child brands: 32% for Kellogg, 33% for General Mills, and 34% for Post.

Improvements in nutrition quality

Table 4 also displays changes in nutrition content of cereals by child, family, and adult brand level and by company. Nutrition values for 2009 and 2012 include all cereals available those years, but differences were measured between cereals in existence both years.

Across all companies, child, family, and adult brands showed significant improvements in overall nutrition scores. Among child brands, overall sodium and sugar reductions were statistically significant, but fiber content did not change significantly. General Mills and Kellogg both significantly reduced the sodium in their child brands, and General Mills had a statistically significant reduction in sugar, from 36% to 33%. Post child cereals in 2012 had more sugar, less fiber, and more sodium than they did in 2009, although the changes were not statistically significant. Post cereals also had the most sodium and least fiber of all child cereals.

Table 4. Changes in nutrition content of child, family, and adult cereals**

	# of varieties in 2012	NPI score		Sugar content (%)		Fiber content (%)		Sodium (per 100 mg)	
		2009	2012	2009	2012	2009	2012	2009	2012
Child brands	29	40	43*	36	33*	5.5	5.1	559	525*
General Mills	12	40	44*	36	33*	7.6	5.6	611	555*
Kellogg	11	41	46*	35	32	4.6	5.5	525	475*
Post	5	42	34	33	34	8.3	2.1	542	558
Other companies	1	54	52	20	27	16.7	10.0	533	533
Family brands	79	51	53*	27	26	6.8	8.3*	470	420*
General Mills	25	46	50*	26	25	6.0	7.4*	669	580*
Kellogg	13	62	68	28	24	8.0	10.0*	171	77
Post	4	46	46	40	40	6.9	6.9	389	386
Quaker	10	44	43	32	32	5.0	7.4	602	533
Other companies	27	51	55	23	23	8.5	8.9	498	399*
Adult brands	153	56	59*	20	21	10.6	10.7*	372	351
General Mills	19	56	58	21	20	13.6	11.8	481	415
Kellogg	34	50	52	24	25	10.6	10.7*	476	465
Post	22	59	61*	20	18	8.0	9.1*	324	287*
Quaker	8	53	66*	23	20*	7.5	9.6	290	223
Other companies	70	60	61	18	19	11.5	10.3	310	312

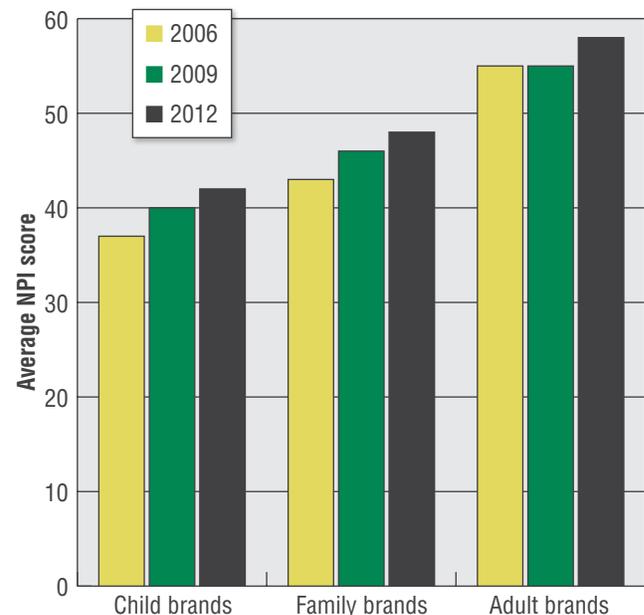
*Significantly different from 2009 value (comparing only varieties that existed in both 2009 and 2012); $p < .05$

**2009 nutrition values include all varieties that existed in 2009; and 2012 values include all varieties that existed in 2012

Among family brands, General Mills significantly improved fiber and sodium content, and Kellogg improved fiber content.

Of the brands that existed in 2006, child cereals have seen consistent improvements in nutrition scores (2006 to 2009 and 2009 to 2012 differences were statistically significant), family brands improved significantly from 2006 to 2012, and adult brands improved from 2009 to 2012 (see **Figure 1**). The child cereal category has seen a 14% improvement in NPI scores over the last five years, compared to a 12% improvement for family cereals and 5% for adult cereals. In 2012, nutrition scores for child cereals were comparable to nutrition scores for family cereals in 2006. Despite these improvements, a large discrepancy remains between nutrition scores of cereals targeted to children and those targeted to adults. Of the 108 cereals with 2006 data, child products had an average score of 42 in 2012, compared to the average adult brand score of 58.

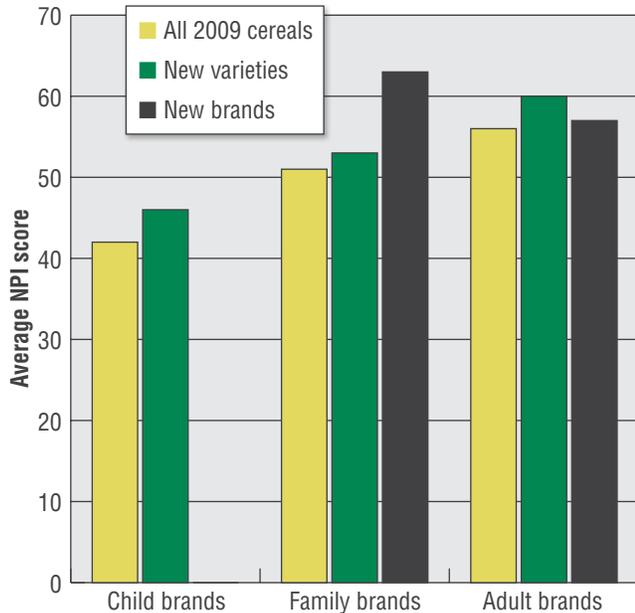
We also compared the nutrition information for all products that existed in 2009 to products introduced after January 1, 2009 (see **Figure 2**), including 43 new varieties of existing brands and 30 new brands. New varieties of existing child brands had significantly higher nutritional values compared to existing cereals, averaging an NPI score of 46, compared to the average of 42 for child brands in 2009. New varieties of existing family and adult brands also had higher NPI scores than existing cereals, but these differences were not statistically significant. No new child brands were introduced during this time period, but new family brands had an

Figure 1. Nutrition quality improvements for child, family, and adult cereals*

*108 cereals included in the 2006 analysis

average NPI score of 63, which was significantly higher than the average of 51 for family brands in 2009. Several of these new family cereals (Kashi Golden Goodness, Mini-Wheats Little Bites varieties, and Annie's Organic Bunny O's) achieved healthy NPI scores greater than 62. However,

Figure 2. Nutrition quality of new cereals



new adult brands had slightly lower scores than previously existing brands.

Additional nutrition criteria

We also examined the nutrition standards of cereals according to additional nutrition criteria, including criteria established by OFCOM in the United Kingdom (foods that can be advertising to children on TV), the USDA (foods approved to include in WIC packages), and the IWG (recommended criteria for foods marketed to children). In addition, we examined products that were approved to advertise to children according to CFBAI participating companies.

As mentioned, the number of cereals included on the list of products approved to be advertised to children by CFBAI companies dropped drastically from 41 in 2009 to 21 in 2011. Nutrition data were available for 17 of those cereals as of May 2012. The percentage of CFBAI-approved cereals with low NPI scores less than 50 increased from 76% to 88%. In addition, although 17% percent of cereals on the list in 2008 had healthy NPI scores greater than 62, not one cereal with an NPI score over 62 was included in the 2011 list. Of note, Mini-Wheats, the highest-rated child or family brand, was absent from the list of approved cereals in 2011, but has since been reinstated in the 2012 list.³ Post joined the CFBAI after the last report was issued, but three of its approved cereals have very low NPI scores of 26 to 28. These three cereals (Fruity, Cocoa and Marshmallow Pebbles) were among the five lowest-scoring cereals in the entire analysis. Although nearly all cereals offered by General Mills, Kellogg,

Table 5. Nutrition scores for cereals included on the CFBAI list of products to be advertised to children*

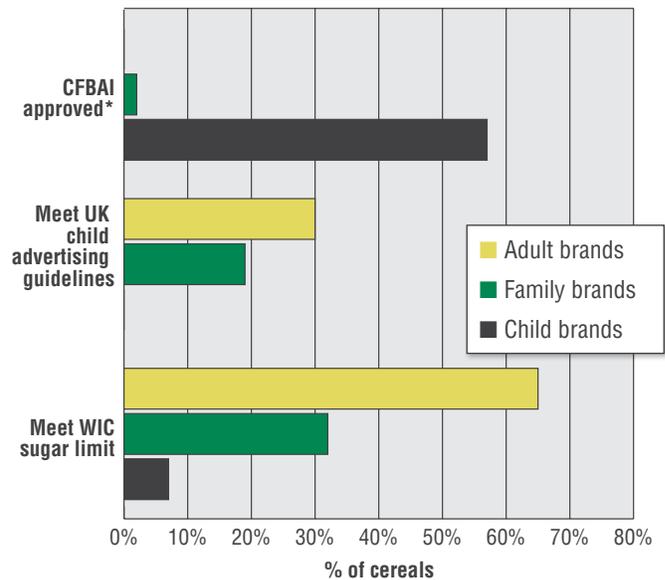
NPI Score	Kellogg	General Mills	Post
>62			
50-62	Corn Pops Rice Krispies		
40-49	Apple Jacks Froot Loops Frosted Flakes	Cinnamon Toast Crunch Cocoa Puffs Honey Nut Cheerios Lucky Charms Trix Frosted Toast Crunch	Honeycomb Alpha Bits
<40		Reese's Puffs	Fruity Pebbles Cocoa Pebbles Marshmallow Pebbles

*Includes cereals on the September 2011 CFBAI list with nutrition data available in May 2012

and Post would qualify for child-directed advertising according to the companies' nutrition criteria for the CFBAI, these generally very low-scoring products are the ones that companies have indicated are appropriate to include in advertising to children.

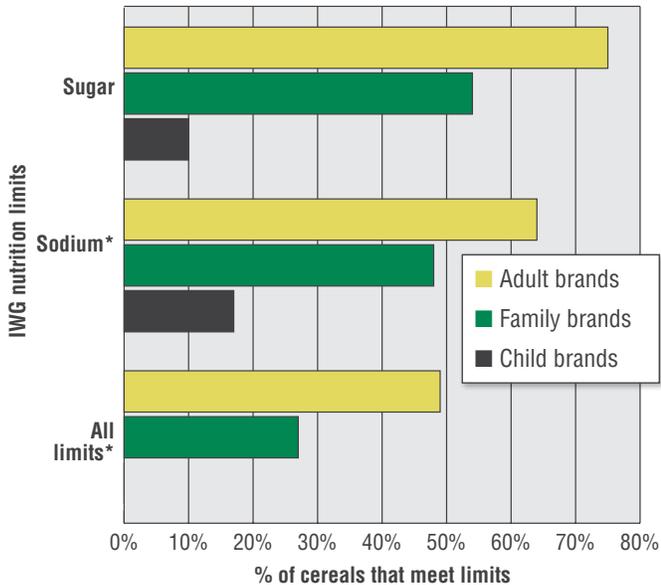
Overall, 57% of child cereals and 2% of family cereals were approved by the CFBAI to include in child-directed advertising (see **Figure 3**). However, just one child cereal (Gluten Free Rice Krispies) could be advertised to children on TV in the

Figure 3. Additional nutrition criteria for child, family, and adult cereals



*Includes cereals from CFBAI participants approved as of September 2011

Figure 4. Cereals meeting IWG nutrient limits on foods marketed to children



*Using interim sodium limits

United Kingdom, and just two met the sugar limits to be included in the WIC program (Rice Krispies and Gluten Free Rice Krispies). In contrast, nearly one in three adult cereals and one in five family cereals met the U.K. child advertising standards. In addition, 32% of family cereals and 65% of adult cereals met the WIC sugar limits. However, General Mills, Kellogg, and Post have not chosen to include these more nutritious products in advertising directed to children.

Using the recommended nutrient limits for foods marketed to children established by the IWG, we found similar results (see **Figure 4**). Adult cereals were more than five times as likely to meet the IWG sugar limit of 26%; just 10% of child cereals met this guideline. Sodium guidelines were less limiting, as approximately one in four child cereals met this limit. However, not one child cereal met the recommended limits on the four nutrients established by the IWG (also including saturated fat and trans fat). These results are in stark contrast to the 49% of adult cereals and 27% of family cereals that met all four IWG limits. The IWG criteria also required that cereals contain at least 50% whole grain, but due to the difficulty of determining whole grain content for many cereals based on ingredient lists, we excluded the whole grain requirement from this evaluation.

Summary of cereal nutrition quality

General Mills, Kellogg, and Post have identified 17 of the cereals in our analysis as healthier options that can be included in advertising directed at children under 12. However, according to our nutrition analyses, as well as standards established by government agencies, none of these products qualify as nutritious products that should be marketed to children. All companies do have products that meet these criteria, but they are marketed to parents or adults (for their own consumption) – not directly to children. Of note, General Mills and Kellogg had family cereals that met the IWG limits for sugar, sodium, and fat, including Multigrain Cheerios and 11 varieties of Mini-Wheats.

Cereal Nutrition Quality

Changes for the better

- Nutrition improvements were achieved across child, family, and adult brands overall, especially for sodium content.
- 13 of the 16 child brands improved NPI scores by an average of 10%, including all General Mills brands.
- New brands and varieties generally had better nutrition scores than existing products.

Changes for the worse

- Post child brands have more sugar, less fiber, and lower NPI scores than they did in 2008.
- The proportion of CFBAI-approved products with a low nutrition score (<50) increased from 76% to 88%. As of 2011, no CFBAI-approved cereals on the list had a healthy NPI score of 62 or higher.

Traditional media advertising

In this section, we first present advertising spending in measured media, including TV, magazines, and the

internet. We then provide data on children's exposure to TV advertising.

Advertising spending

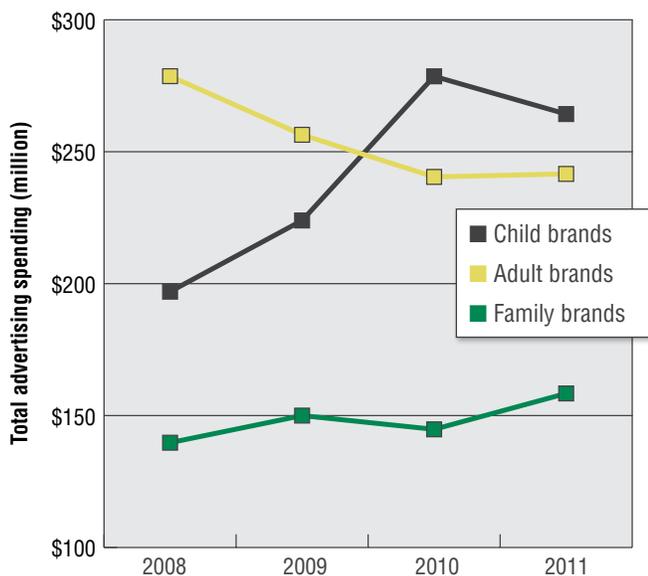
Advertising spending	Definitions
Advertising spending	Amount spent on all measured media, including TV, magazines, internet, radio, newspapers, FSI coupons, and outdoor. Data were licensed from Nielsen.

In 2011, spending on all measured media by the cereal companies in our analysis reached \$712 million, a 7% increase versus 2008. Cereal companies spent the most to support child brands in 2011 (\$264 million), followed closely by adult brands (\$242 million). Cereal spent much less (\$158 million) on family brands, as well as a small amount (\$47 million) on company-level ads to support multiple brands. Spending on child brands increased dramatically (+34%) from 2008 to 2011, even with a slight decline of 5% from 2010 to 2011 (see **Figure 5**). In contrast, there was a steady reduction in spending on adult brands, down by 13% from 2008. Cereal companies spent more on adult brands than on child brands in 2008, but in 2010 and 2011 they spent more on child brands. Spending for adult brands dropped from 42% of all advertising spending in 2008 to 34% in 2011, while spending on child brands increased from 30% of spending in 2008 to 37% in 2011. Advertising spending on family brands also increased by 14% from 2008 to 2011, but represented just over 20% of cereal advertising expenditures both years. In 2011, child and family brands together accounted for nearly 60% of all cereal advertising spending compared with 51% in 2008.

General Mills and Kellogg continued to dominate advertising spending for child and family cereal brands (see **Figure 6**). General Mills spent a total of \$246 million in 2011 on its child and family brands – an increase of 26% versus 2008. Kellogg's spending increased by 38% to reach \$162 million in 2011 in total, while spending on its child brands jumped by 47%. General Mills devoted 42% of its total cereal advertising spending in 2011 to child brands, and Kellogg devoted 43%. Post and the other companies in our analysis spent considerably less. Post did not advertise any family brands, but its advertising spending on child brands increased by 16% from 2008 to 2011. On the other hand, Quaker significantly reduced advertising spending from \$12 million in 2008 to just \$155,000 in 2011 for its family brands. Two of the smaller companies in our analysis (Barbara's Bakery and Nature's Path) also had some advertising spending on family brands in 2011, but their combined spending represented less than 1% of advertising spending for all child and family brands.

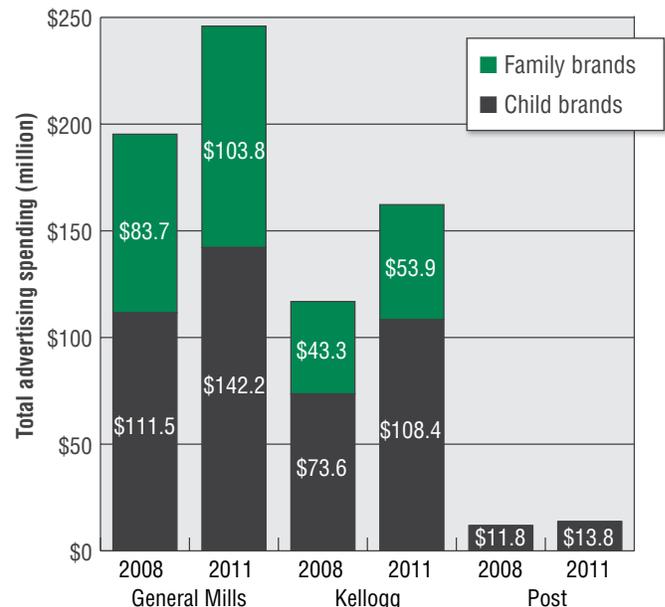
Table 6 presents spending allocated to TV, magazine, and internet advertising by company for child and family brands. Cereal company budgets continued to be allocated primarily to TV advertising, representing 86% of advertising spending

Figure 5. Trends in advertising spending for child, family, and adult brands



Source: Nielsen

Figure 6. Total advertising spending for child and family brands by company



Source: Nielsen

Table 6. Advertising spending on child and family brands by medium and company

	# of brands in 2011*	TV (million)		Magazines (million)		Internet (million)	
		2008	2011	2008	2011	2008	2011
General Mills	11	\$180.3	\$228.8	\$5.1	\$4.5	\$7.8	\$11.6
Kellogg	6	\$100.9	\$127.8	\$11.9	\$28.1	\$3.8	\$4.8
Post**	1	\$10.3	\$6.7	\$2.2	\$5.2	\$1.2	\$5.5
Other companies	1	\$7.3	\$5.5	\$4.7	\$0	\$2.2	\$0

*Brands with \$100,000 or more in total advertising spending

** Includes spending on ads for "kids cereals" combined

Source: Nielsen

for child and family brands. In 2011, General Mills and Kellogg both increased media dollars dedicated to TV by 27%. Cereal companies also expanded spending in other media. General Mills spent 49% more on internet advertising in 2011 than in 2008, and it spent 160% more on internet than on magazine advertising. Kellogg also increased internet advertising by 27%, but its most noteworthy shift was toward magazine advertising, which increased 136% over 2008. At \$28 million, magazines were the one medium in which Kellogg outspent General Mills. Post also shifted advertising dollars into magazines, but reduced its internet advertising versus 2008. Across all companies, spending on magazine advertising represented 9% of media budgets and internet advertising represented 4%.

Ranking Table 2 details advertising spending for 2008 and 2011 for each of the child and family brands in our analysis. General Mills advertised seven child brands and four family brands in 2011. Excluding Kix (which had very low spending), General Mills averaged \$20 million in advertising for each child brand and \$35 million for each family brand. Kellogg advertised five child brands in 2011, averaging \$22 million on each. Kellogg also advertised one family brand (Mini-Wheats), with a budget of \$54 million. Post advertised just one child brand (Pebbles) in 2011, totaling \$14 million. Two brands no longer advertised in 2011 (Post Honeycomb and Nature's Path Envirokidz Organic).

More than one-half of the 23 advertised child and family brands in our analysis posted an increase in total advertising

spending in 2011 as compared to 2008. Backed by \$74 million in advertising dollars in 2011, General Mills Honey Nut Cheerios continued to receive the highest level of media spending among the child and family brands and exceeded the second-most advertised brand (Kellogg Mini-Wheats) by 37%. However, the most notable increases in spending on child and family brands were for General Mills Cinnamon Toast Crunch and Chex; both posted increases exceeding 85%. General Mills also increased spending on Reese's Puffs (+57%), Lucky Charms (+21%), and Trix (+17%). The only General Mills child brands with lower spending in 2011 versus 2008 were Cocoa Puffs (-9%) and Cookie Crisp (-49%).

Kellogg substantially reduced spending on its Rice and Cocoa Krispies brand in 2011 versus 2008 (-26%). However, it dedicated more advertising dollars to two child brands: Frosted Flakes more than doubled (+121%), and Froot Loops increased by 353%. These Kellogg brands ranked as the fourth and fifth most heavily supported child or family brands, up from fifth and twelfth in 2008.

Although the majority of cereal companies' advertising spending was devoted to TV, General Mills spent \$2.4 million or more on internet advertising for three child brands (Cinnamon Toast Crunch, Honey Nut Cheerios, and Lucky Charms). Kellogg also spent almost \$12 million on magazine advertising for Rice and Cocoa Krispies and more than \$6 million on Mini-Wheats and Froot Loops magazine ads. In addition, Post spent more than \$5 million advertising Pebbles in magazines.

TV advertising exposure

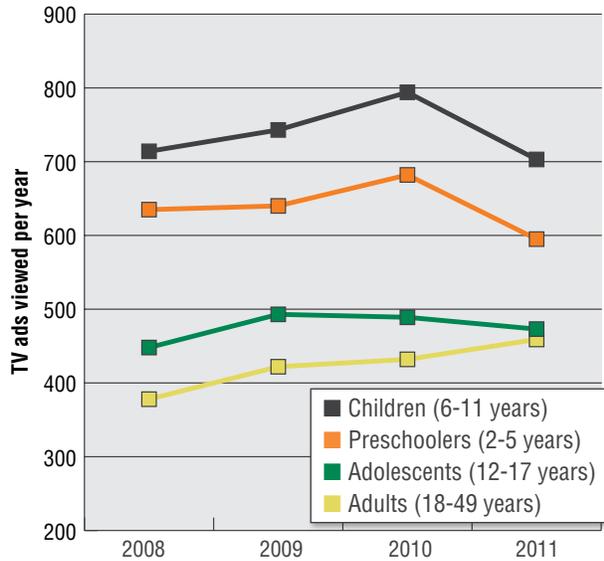
TV advertising exposure Definitions

Gross rating points (GRPs)	Measure of the per capita number of TV advertisements viewed by a specific demographic group over a period of time across all types of programming. GRPs for specific demographic groups are also known as targeted rating points (TRPs). Data were licensed from Nielsen.
Average advertising exposure	GRPs divided by 100. Provides a measure of the number of ads viewed by the average individual during the time period measured.
Targeted ratio: Children to adults	GRPs for 2- to 11-year-olds divided by GRPs for 18- to 49-year-olds. Provides a measure of relative exposure of children to adults.

As **Figure 7** illustrates, the number of TV ads viewed by 2- to 11-year-olds for all cereals trended steadily upward from 2008 to 2010, and then fell sharply in 2011. As a result,

preschoolers (2-5 years) saw 6% fewer ads in 2011 versus 2008, and children (6-11 years) saw 2% fewer. However, overall exposure to TV advertising for cereals remained

Figure 7. Trends in exposure to TV advertising for all cereals by age group



Source: Nielsen

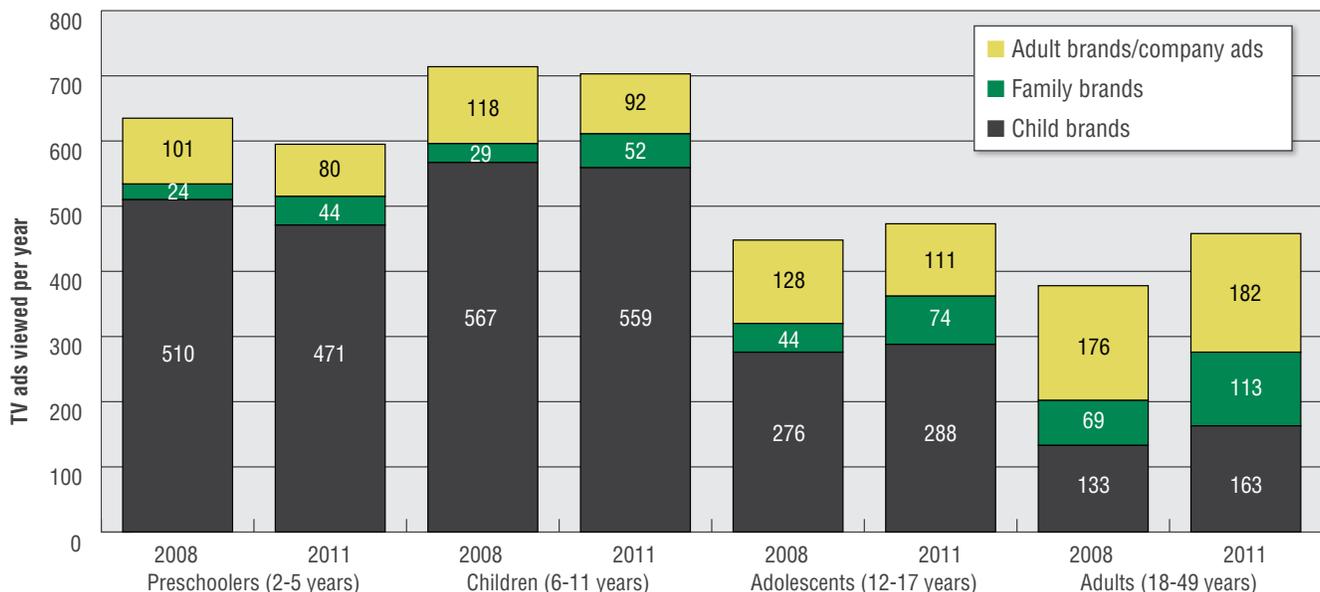
highest for children compared with other age groups. Preschoolers saw 1.6 ads per day in 2011 and older children saw 1.9 per day, whereas adolescents and adults saw an average of 1.3 cereal ads per day. From 2008 to 2010, adolescent exposure exceeded that of adults by as many as 70 ads per year. However, increases in adult exposure (+21% from 2008 to 2011) coupled with relatively steady exposure among adolescents almost closed the gap in 2011.

Child brands comprised 79% to 80% of the breakfast cereal ads seen by children (2-11 years) on TV in 2011, 61% of cereal

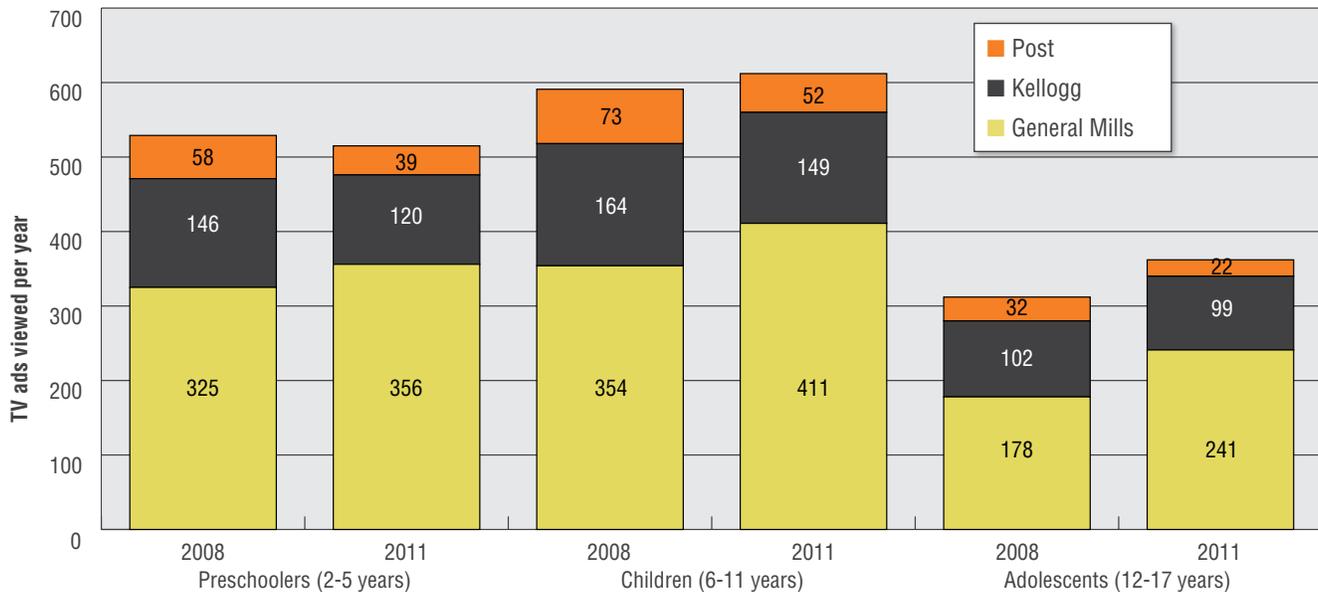
ads seen by adolescents, and just 36% of ads seen by adults; these proportions are comparable to four years ago (see **Figure 8**). As with cereal TV ads overall, preschoolers viewed fewer ads for child brands in 2011 compared with 2008 (-8%), and the number of ads viewed by older children (6-11 years) remained fairly stable (-1%). In contrast, adolescents and adults viewed 4% and 23% more ads, respectively, for child brands in 2011 than they did in 2008. For family brands, on the other hand, exposure to TV advertising rose among all age groups from 2008 to 2011, ranging from a 66% increase for adults to 86% for preschoolers. Although family brands represented just 7% of ads viewed by children (2-11 years), they represented 16% of the ads seen by adolescents, and one-quarter of the ads seen by adults. In comparison, children saw 21% to 22% fewer TV ads for adult brands and company-level ads in 2011 compared with 2008, and adolescents saw 14% fewer. However, adult exposure to TV ads for adult cereals increased slightly (+3%). Adult brands and company ads represented just 13% of cereal ads viewed by preschoolers and children, 23% of ads viewed by adolescents, and 40% of those viewed by adults.

Youth of all ages continued to be exposed to more TV ads for General Mills cereals than for other cereal companies (see **Figure 9**). General Mills was also the only company to increase cereal advertising to youth of all ages from 2008 to 2011. On average, preschoolers saw 356 ads for General Mills child and family brands in 2011 (+10% vs. 2008), and older children (6-11 years) saw more than 400 of these ads (+16%). Adolescents saw fewer TV ads for child and family brands overall versus their younger counterparts, but their exposure to General Mills ads increased by 35%, the highest increase for any age group. Conversely, children's exposure to TV ads for Kellogg and Post child and family brands declined in 2011 compared with 2008. Preschoolers saw 18% fewer ads for Kellogg cereals and older

Figure 8. Exposure to TV advertising for child, family, and adult brands/company ads by age group



Source: Nielsen

Figure 9. Exposure to TV advertising for child and family brands by company and age group

Source: Nielsen

children saw 9% fewer, whereas adolescent exposure was consistent from year to year. Youth of all ages saw 29% to 32% fewer ads for Post child brands in 2011 versus 2008 (Post did not advertise any family brands). As a result, General Mills' share of TV exposure among children (2-11 years) grew over the period examined. General Mills was responsible for 68% of children's exposure to TV ads for child and family brands in 2011, up from 61% in 2008. Kellogg was responsible for 24% of children's exposure, compared to 28% in 2008, and Post was responsible for less than 10%, versus 12% in 2008.

Ranking Table 3 details the average number of ads viewed by children for individual child and family brands. In addition, it provides child to adult targeted ratios, a measure of relative exposure for children versus adults. In 2011, children viewed 1.4 to 6.9 times as many TV ads for the 12 child brands in our analysis compared with adults. In contrast, children viewed 50% to 60% fewer ads than adults for the five family brands.

General Mills produced four of the top-five brands advertised most often to children on TV in 2011. Children saw the most ads for Cinnamon Toast Crunch: 61 ads on average for preschoolers (2-5 years) in 2011 and 72 for older children (6-11 years). All children (2-11 years) saw 2.5 times more Cinnamon Toast Crunch ads than adults saw. Honey Nut Cheerios was the second-most advertised cereal to children, with average exposure rates of 59 ads for preschoolers and 67 ads for older children. Reese's Puffs and Lucky Charms ranked fourth and fifth in number of TV ads viewed by children. General Mills also had five of the seven child brands with child to adult targeted ratios above 6.0. Children saw approximately seven times more ads for Reese's Puffs, Lucky Charms, Trix, Cocoa Puffs, and Cookie Crisp than adults saw. In addition, children's exposure (2-11 years) to TV ads for

four General Mills child brands increased from 2008 to 2011, with the greatest increases for Reese's Puffs (+52%) and Trix (+26%). The company did, however, reduce the number of ads viewed by children for three child brands (Lucky Charms, Cocoa Puffs, and Cookie Crisp), but these declines were lower at 8% to 17%.

Kellogg Froot Loops was the third most frequently advertised cereal brand on TV in 2011, and exposure to Froot Loops advertising nearly doubled from 2008 to 2011 among children and preschoolers. Children also viewed 3.4 times more ads for Froot Loops than adults viewed. Conversely, children viewed one-third as many ads for Corn Pops, Apple Jacks, and Rice and Cocoa Krispies in 2011 versus 2008. These three brands ranked in the bottom five for child exposure in 2011. Post's one advertised brand (Pebbles) ranked number six, and exposure to TV ads for Pebbles increased by 18% for preschoolers and 27% for older children. In addition, children saw 6.4 times more ads for the product than adults saw.

Summary of traditional media advertising

Our analysis highlights mixed trends with regard to traditional media advertising for cereals. Total advertising spending on child brands increased from 2008 to 2011, yet preschoolers' exposure to cereal advertising on TV went down slightly. However, one-half of child brands increased their TV advertising to children substantially. Cereal companies also increased advertising spending on magazines or the internet for more than one-half of their child brands, and in many cases appeared to target older age groups (adolescents and adults) with TV advertising. Overall, children's exposure to TV ads for General Mills child and family brands increased, whereas their exposure to TV ads for Kellogg and Post brands went down.

Traditional Media Advertising

Changes for the better

- Preschoolers (2-5 years) saw 8% fewer TV ads for child brands in 2011 versus 2008 and 6% fewer cereal ads in total; exposure by older children (6-11 years) remained stable.
- The number of TV ads viewed by all children went down for three child brands from General Mills (Lucky Charms, Cocoa Puffs, and Cookie Crisp) and three from Kellogg (Corn Pops, Apple Jacks, and Rice and Cocoa Krispies).
- Quaker significantly reduced advertising dollars dedicated to its family brands (to just \$155,000 in 2011), and did not advertise its child or family brands on TV in 2011.
- Post stopped advertising one brand (Honeycomb) altogether.

Changes for the worse

- General Mills, Kellogg, and Post all spent more to advertise child and family brands in 2011, including a 34% increase in spending on child brands.
- Reversing the trend in 2008, companies spent more to advertise child brands than adult brands.
- General Mills, Kellogg, and Post supplemented TV advertising with additional spending in other media (i.e., internet and magazines).
- General Mills spent 26% more to advertise child and family brands on TV in 2011 versus 2008; children's exposure to ads for four brands increased (Cinnamon Toast Crunch, Honey Nut Cheerios, Reese's Puffs, and Trix).
- Kellogg spent 27% more to advertise child and family brands on TV in 2011; children's exposure to ads for two brands increased (Froot Loops and Frosted Flakes).
- Children's exposure to TV ads for Post's one advertised child brand (Pebbles) increased.

Internet marketing

We examined three types of marketing that occur on the internet: cereal company-sponsored websites, banner advertising on third-party websites, and social media

marketing. We provide child and adolescent exposure data when available.

Website exposure

Website exposure	Definitions
Average monthly unique visitors ⁴	Average number of unique individuals who visited the website each month. Data are reported for children (2-11 years) and adolescents (12-17 years).
Average visits per month ⁵	Average number of times each unique visitor (2-17 years) visited the website each month.
Average minutes per visit ⁶	Average number of minutes each unique visitor (2-17 years) spent on the website each time she or he visited.
Average minutes per month	Average number of minutes each unique visitor spent on the website each month (average visits per month multiplied by average minutes per visit).
Targeted visitor ratios: Child to adult; teen to adult	Provides the relative proportion of children and teens who visited the website as compared to the proportion of adult visitors. For example, if the child to adult ratio for a website was 2.0, then children were twice as likely to visit the website compared to adults.

We identified 15 cereal company-sponsored websites for child brands in 2011 (see **Table 7**). General Mills, Kellogg, and Post had 13 different websites specifically targeted to children. In addition, two adult-targeted websites had some child content (e.g., games on RiceKrispies.com). Of the 15 websites examined, 12 had enough visitors to obtain exposure data from comScore.

The two most popular child-targeted websites in 2008 – Millsberry.com and Postopia.com – no longer existed by the end of 2011. In addition, CapnCrunch.com and Envirokidz.com no longer contained child-targeted features. Of note, CapnCrunch.com now targets adults with a nostalgia theme (“Join others in turning back the clock and reclaim your Crunch Time!”).⁷ However, new child-targeted sites have emerged. General Mills introduced two new advergame sites, HoneyDefender.com for Honey Nut Cheerios and

CrazySquares.com for Cinnamon Toast Crunch. In addition, Post replaced Postopia.com with a smaller advergame site, PebblesPlay.com (Postopia.com currently redirects to this page) and introduced GoBigForThePlanet.com with activities promoting Honeycomb cereal.

Three Kellogg advergame websites had the highest number of child visitors in 2011 (see **Ranking Table 4**). Froot Loops led with an average of 161,900 unique child visitors per month, followed by AppleJacks.com with 116,200, and CornPops.com with 59,500. General Mills followed with three advergame sites averaging 29,300 monthly unique child visitors (ReesesPuffs.com) to 52,300 (LuckyCharms.com). Of note, with just one quarter of data available, General Mills’ new HoneyDefender.com website ranked fifth in number of unique child visitors for the year.

Table 7. Cereal company-sponsored websites with child content

Company	Website	Type	Exposure data available
General Mills	CookieCrisp.com	Child-targeted website	
General Mills	CrazySquares.com (Cinnamon Toast Crunch)	Child-targeted website	
General Mills	HoneyDefender.com (Honey Nut Cheerios)	Child-targeted website	✓
General Mills	HoneyNutCheerios.com	Child content on adult website	✓
General Mills	LuckyCharms.com	Child-targeted website	✓
General Mills	ReesesPuffs.com	Child-targeted website	✓
General Mills	TriXWorld.com	Child-targeted website	✓
Kellogg	AppleJacks.com	Child-targeted website	✓
Kellogg	CornPops.com	Child-targeted website	✓
Kellogg	FrootLoops.com	Child-targeted website	✓
Kellogg	FrostedFlakes.com	Child-targeted website	✓
Kellogg	RiceKrispies.com	Child content on adult website	✓
Post	GoBigForThePlanet.com (Honeycomb)	Child-targeted website	
Post	PebblesPlay.com	Child-targeted website	✓
Post	Postopia.com	Child-targeted website	✓

Table 8. Average monthly unique child visitors to cereal company websites by quarter

Company	Website	Monthly unique child visitors (2-11 years)				2011 average (000)
		Jan-Mar (000)	Apr-Jun (000)	July-Sept (000)	Oct-Dec (000)	
Kellogg	FrootLoops.com	126.5	207.4	313.9	-	161.9
Kellogg	AppleJacks.com	140.7	118.9	96.5	108.8	116.2
Kellogg	CornPops.com	237.9	-	-	-	59.5
General Mills	LuckyCharms.com	99.2	35.3	36.9	37.8	52.3
General Mills	HoneyDefender.com*	-	-	-	170.7	42.7
General Mills	ReesesPuffs.com	13.5	20.1	2.2	81.5	29.3
Kellogg	FrostedFlakes.com	63.0	-	51.1	-	28.5
Post	PebblesPlay.com*	26.8	19.8	5.1	48.8	25.1
General Mills	TriXWorld.com	-	-	49.7	-	12.4
Kellogg	RiceKrispies.com	4.8	6.7	4.6	5.2	5.3
General Mills	HoneyNutCheerios.com	-	0.3	5.0	13.3	4.7
Post	Postopia.com**	3.3	-	-	-	0.8

* Launched after 2009

** Discontinued in early 2011

Source: comScore Media Metrix Key Measures Report (January – December 2011)

Of the 10 child-targeted websites that also existed in 2008, 8 had more unique child visitors in 2011. The number of child visitors to FrootLoops.com and CornPops.com increased by approximately 300%, and AppleJacks.com had a 150% increase. RiceKrispies.com and HoneyNutCheerios.com (the two adult-targeted websites with child content), as well as the discontinued Postopia.com, had the fewest unique child visitors of the sites with available data. In total, Kellogg websites attracted 339,000 unique child visitors who averaged 4.3 minutes on the sites every month in 2011. General Mills sites attracted approximately one-third as many unique child visitors (119,000 per month), and Post sites attracted just 25,000 unique child visitors per month.

None of the current websites approached the levels of engagement achieved by the discontinued Millsberry.com and Postopia.com; the two averaged 24 and 15 minutes per visit, respectively, in 2008. By contrast, the most engaging site in 2011 (CornPops.com) kept children online for 5 minutes

per visit, on average. Children also visited the current sites less often. Young people had visited Millsberry.com and Postopia.com 2.8 and 2.0 times per month in 2008, respectively, while CornPops.com was visited 1.6 times per month in 2011 and was the most frequently visited site in the current analysis.

There was considerable variability across quarters in the number of unique visitors for some advergaming websites (see **Table 8**). For instance, FrootLoops.com averaged 313,900 unique child visitors per month in the third quarter – almost as many monthly unique child visitors as the most popular website in 2008 (Millsberry.com) – but it did not have enough visitors for comScore to measure during the fourth quarter. Similarly, CornPops.com averaged 237,900 unique child visitors in the first quarter, but did not have enough visitors for comScore to measure during the remainder of the year. Unique child visitors to LuckyCharms.com also declined significantly after the first quarter. On the other hand, HoneyDefender.com first appeared

Table 9. Comparisons of child, adolescent, and adult visitors to websites for child brands

Company	Website	Children (2-11 years)		Adolescents (12-17 years)	
		Monthly unique visitors (000)	Child:adult targeted ratio	Monthly unique visitors (000)	Teen:adult targeted ratio
General Mills	TriXWorld.com	12.4	20.2	4.5	6.0
Kellogg	FrootLoops.com	161.9	20.2	54.5	5.1
Kellogg	CornPops.com	59.5	7.2	21.6	4.2
General Mills	LuckyCharms.com	52.3	5.3	18.8	1.9
General Mills	ReesesPuffs.com	29.3	5.2	10.3	3.5
Kellogg	AppleJacks.com	116.2	4.1	58.8	3.0
General Mills	HoneyDefender.com	42.7	3.6	18.8	2.1
Kellogg	FrostedFlakes.com	28.5	3.2	15.8	1.6
Post	PebblesPlay.com	25.1	1.0	21.5	1.1
General Mills	HoneyNutCheerios.com	4.7	0.7	7.8	1.1
Kellogg	RiceKrispies.com	5.3	0.2	17.0	0.4

Source: comScore Media Metrix Key Measures Report (January – December 2011)

in the comScore data during the fourth quarter of 2011 and averaged 170,700 unique child visitors per month, the fourth highest number of visitors to any website examined in a quarter. Similarly, the number of unique child visitors to ReesesPuffs.com and PebblesPlay.com increased dramatically during the fourth quarter of 2011.

With the exception of Postopia.com, all child-targeted websites had child to adult targeted ratios of 3.2 or higher, confirming that the sites disproportionately appeal to children (see **Table 9**). For example, children were more than 20 times as likely to visit TrixWorld.com and FrootLoops.com

compared with adults. Children were also at least five times more likely to visit ReesesPuffs.com, LuckyCharms.com, and CornPops.com. These ratios were much higher in 2011 than in 2008 when the most heavily targeted site – Postopia.com – had a child to adult targeted ratio of approximately 3.0. The child-targeted websites also attracted more child than adolescent visitors, ranging from 17% more children visiting PebblesPlay.com to three times as many visiting FrootLoops.com. Not surprisingly, the two adult-targeted sites with child content (HoneyNutCheerios.com and RiceKrispies.com) were the only sites that were more likely to be visited by adults than by children.

Banner advertising on third-party websites

Banner advertising exposure

Definitions

Third-party websites	Websites on which advertising for the brands in our analysis appear.
Banner advertising	Ads that appear on third-party websites as rich media (SWF files) and traditional image-based ads (JPEG and GIF files). They usually appear in a sidebar or “banner” at the top of a web page. Text, video, and html-based ads are not included.
Youth websites	Third-party websites with a disproportionate number of youth visitors (2-17 years), including entertainment websites for youth and websites with a percentage of youth visitors (2-17 years) that exceeds the percentage of youth visitors on the total internet.
Unique viewers per month ⁸	Average number of unique viewers exposed to a company’s banner advertisements each month.
Ads viewed per viewer per month ⁹	Average number of banner advertisements viewed per unique viewer each month.
Proportion of ads viewed on youth websites ¹⁰	Percentage of a company’s banner advertisements that appeared on youth websites out of all websites on which the ads appeared.
Average number of ad views on youth websites per month ¹¹	Number of banner advertisements viewed on youth websites in an average month in 2011.

Eleven child brands and three family brands were advertised on youth websites in 2011. More than 142 million ads for these brands were viewed on youth websites every month on average, totaling 1.7 billion ads viewed in 2011. Advertising for child brands dominated the banner advertising landscape in 2011, representing 86% of all cereal advertising on youth websites. **Table 10** lists the youth websites with the most advertising for child brands. The majority of child brand banner advertising that appeared on youth websites (88%) was placed on websites of just three entertainment companies: Viacom Digital (e.g., Nick.com, NeoPets.com), Turner Entertainment Digital (e.g., CartoonNetwork.com), and Disney Online.

Due primarily to the discontinuation of Millsberry.com (and the banner advertising that promoted it), banner advertising for child and family brands on youth websites decreased by 25% from 2008-2009 to 2011. Despite this decrease, General Mills remained the most prominent advertiser, placing twice as many advertisements as Kellogg and 37 times those of Post (see **Ranking Table 5**). Nearly 95 million

Table 10. Top third-party youth websites with advertising for child brands

Websites	2011 yearly ad views for child cereal brands (million)
Viacom Digital (including Nick.com and NickJr.com sites, iCarly.com, AddictingGames.com, and NeoPets.com)	938.5
Turner Entertainment Digital (including CartoonNetwork.com and EdEddNEddy.com)	290.0
Disney Online websites	232.1
WildTangent Media (including Roblox.com and AQWorlds.com)	64.4
Youthology Kids (including CartoonDollEmporium.com and Kidzworld.com)	36.6
MiniClip.com	20.0
MyYearBook.com	15.0
CoolMath.com websites	10.4

Source: comScore Ad Metrix Advertiser Report (January – December 2011)

Table 11. Average monthly ads viewed on youth websites for child and family brands by quarter

Company	Brand	Proportion of ads viewed on youth websites	Monthly ad views on youth websites				2011 average (000)
			Jan-Mar (000)	Apr-June (000)	July-Sept (000)	Oct-Dec (000)	
Kellogg	Froot Loops	83%	998	25,127	44,506	0	17,658
General Mills	Reese's Puffs	81%	19,100	8,449	109	35,883	15,885
Kellogg	Corn Pops	79%	6,875	151	0	0	1,756
General Mills	Trix	75%	0	543	35,079	0	8,905
General Mills	Lucky Charms	71%	54,689	36,049	12,667	37,777	35,295
Kellogg	Apple Jacks	62%	12,762	6,961	11,038	7,143	9,476
Kellogg	Frosted Flakes	61%	13,456	179	25,823	1,175	10,158
General Mills	Cinnamon Toast Crunch	55%	27,968	14,741	15,125	20,638	19,618
Post	Pebbles	44%	0	157	0	10,165	2,581
General Mills	Honey Nut Cheerios	29%	4,642	10,006	24,931	11,060	12,660
Kellogg	Rice and Cocoa Krispies	15%	0	5,908	2,716	10,749	4,843
Kellogg	Mini-Wheats	4%	1,072	667	4,456	0	1,549
General Mills	Cheerios (except Honey Nut)	3%	1,624	2,054	3,049	3,410	2,534
General Mills	Chex	0%	8	0	0	0	2

Source: comScore Ad Metrix Advertiser Report (January – December 2011)

ads for General Mills child and family brands were viewed on youth websites per month on average in 2011.

Lucky Charms was the most heavily advertised brand on youth websites in 2011. On average, 6.2 million viewers each saw 7.2 ads for Lucky Charms every month (+58% from 2008-2009). Cinnamon Toast Crunch ranked second with 7 million viewers who each saw 4.9 ads per month. Of note, this brand had not been promoted on youth websites in 2008-2009. General Mills also tripled its advertising on youth websites for Honey Nut Cheerios and increased ads for Reese's Puffs by 4%. Trix was the only General Mills child brand with fewer banner ads in 2011 (-15%), yet it remained the eighth most widely promoted cereal on youth websites.

From 2008-2009 to 2011, Kellogg nearly doubled total advertising on third-party youth websites for its child brands, reaching 43.9 million ads viewed per month in 2011. Over the same period, banner advertising for Frosted Flakes increased by 13 times and Rice Krispies and Froot Loops increased three-fold. On average, 3.4 million viewers each saw 4.7 Froot Loop ads per month, making it the third most frequently promoted cereal on youth websites in 2011. In addition, 6.3 and 3.2 million viewers each saw approximately four ads each for Rice Krispies and Frosted Flakes per month. Banner advertising for Apple Jacks on youth websites remained relatively stable from 2008-2009 to 2011 and 3.6 million individuals saw 3.9 ads each for this brand in 2011. Corn Pops advertising on youth websites decreased substantially over the same time period (-62%). Of note, Kellogg discontinued advertising Cocoa Krispies on youth websites in 2011.

In 2011, Post advertised just one child brand on youth websites (Pebbles); these ads mainly encouraged visits

to PebblesPlay.com. Nearly 2.6 million Pebbles ads were viewed on youth websites in an average month in 2011, and PebblesPlay.com was promoted twice as often on youth websites in 2011 as Postopia.com had been in 2008-2009.

Table 11 presents the proportion of banner ads for each brand that were viewed on youth websites. For General Mills, the proportion of banner ads for child brands viewed on youth websites ranged from 55% for Cinnamon Toast Crunch to 81% for Reese's Puffs; only banner ads from Honey Nut Cheerios were viewed relatively infrequently (29% of ad views) on youth websites. Similarly, the proportion of banner ads for Kellogg child brands viewed on youth websites ranged from 61% for Frosted Flakes to 83% for Froot Loops. However, Rice and Cocoa Krispies had a low proportion of banner ads viewed on youth websites (15%). Of note, the two child brands with the lowest proportion of banner ads on youth websites (Honey Nut Cheerios and Rice and Cocoa Krispies) were also the only child brands with adult-targeted websites. Slightly less than one-half of banner ads for Post Pebbles appeared on youth websites.

Banner ads for family brands rarely appeared on youth websites (0-4% of ads viewed). Approximately 2.5 million ads for General Mills Cheerios (except Honey Nut) and 1.5 million ads for Kellogg Mini-Wheats were viewed on youth websites in an average month. Although banner advertising on youth websites for Mini-Wheats increased five-fold from 2008-2009, this number represented just 4% of all banner ads viewed for the brand.

As observed for the number of unique child visitors to cereal company websites, the volume of banner advertising on youth websites fluctuated greatly by quarter (see **Table 11**). Two

child brands with the highest number of unique visitors to their websites during the fourth quarter of 2011 (Reese's Puffs and Pebbles), also exhibited fourth quarter jumps in banner advertising on youth websites. In addition, three brands (Apple Jacks, Lucky Charms, and Corn Pops) exhibited the highest numbers of unique child visitors to their websites

during the first quarter of 2011, as well as the highest numbers of ads viewed on youth websites. Finally, Froot Loops and Trix both had the highest volume of banner advertising on youth websites and unique visitors to their websites during the third quarter.

Social media

Social media marketing Definitions

Facebook	The largest social networking site. Advertisers maintain their own pages on which they present information about their products, share links to other sites, upload photos and videos, and post messages.
Facebook "likes"	Facebook users can become fans of a cereal brand by clicking a "like" button on the brand's page. A thumbnail photo of that individual is then visible on the brand page in the "people who like this" section. Any time the brand modifies its page that activity shows up in the individual's "news feed," or personalized Facebook home page. Similarly, any time the individual interacts with the brand's page, this action shows up in the "news feeds" of all his or her Facebook friends. The cereal brand also appears on the individual's Facebook page as something that he or she "likes."
Twitter	Twitter is a micro-blogging service. Cereal brands publish 140-character messages called "tweets" that are posted on their profile pages. Users can "follow" cereal brands by subscribing to their tweets. Twitter users may also follow cereal brand tweets through their mobile phones.
YouTube	YouTube is a website that enables cereal brands to upload and share videos for the public to view. A few brands in our analysis have customized channels on YouTube with playlists of videos available for viewing.

We found eight child and family brands that used social media marketing (see **Ranking Table 6**). General Mills Cheerios had the greatest social media presence, with 741,000 Facebook "likes" as of May 1, 2012; more than 5,000 Twitter followers; and 17,500 views on its YouTube channel. Cheerios social media accounts were also among the most active, with 13 Facebook posts and 1,400 tweets during April 2012. In addition, Kellogg Frosted Flakes and Mini-Wheats had large numbers of Facebook likes (300,000 and 145,000, respectively). Quaker Cap'n Crunch also had an active social media presence, posting 33 comments on its Facebook page in April 2012. Cap'n Crunch was also the only other brand with a Twitter account, posting 497 monthly tweets. General Mills Golden Grahams sponsored a YouTube channel with 43 videos featuring "Golden Grant" cartoons. The channel had accumulated 277,000 views, although no new videos have been posted since 2010.

With the exception of Frosted Flakes, we found no evidence of social media marketing by cereal companies to promote child brands. Four additional child cereals (Fruity Pebbles, Cinnamon Toast Crunch, Cocoa Puffs, and Lucky Charms) did have Facebook pages with significant numbers of likes (29,000-69,000). However, these pages appeared to be

Facebook-user generated. We could find no evidence that they were sponsored by Post or General Mills.

Summary of internet marketing

The most significant change since the first Cereal FACTS report is that the two extremely popular advergame websites (Millsberry.com and Postopia.com) have been discontinued. As a result, the total number of child visitors to cereal company websites and the amount of banner advertising on third-party youth websites declined from 2008 to 2011. However, General Mills, Kellogg, and Post have all introduced new child-targeted websites, and they encouraged children to visit the sites with almost 2 billion banner ads on other popular children's websites, including Nick.com and Disney.com. As a result, 5 of the 10 child-targeted websites in this analysis had approximately 100,000 or more unique child visitors per month during at least one quarter of 2011. Social media was widely used by seven family brands (e.g., Cheerios and Cap'n Crunch). However, Frosted Flakes was the only child brand with a company-sponsored social media presence.

Internet Marketing

Changes for the better

- The two most-visited and engaging children's advergaming websites – Millsberry.com and Postopia.com – were discontinued, as was banner advertising for these sites.
- Cap'n Crunch discontinued its child-targeted website; the site is now geared toward adults.
- Banner advertising for child and family brands on youth websites decreased by 25%, including a reduction of 43% by General Mills (primarily due to the discontinuation of Millsberry.com).
- Kellogg stopped promoting Cocoa Krispies on youth websites and reduced advertising for Corn Pops by approximately two-thirds.

Changes for the worse

- Four new child-targeted sites were introduced for Honey Nut Cheerios, Cinnamon Toast Crunch, Pebbles, and Honeycomb.
- Child visitors increased for 8 of the 10 child-targeted cereal company websites, including increases of 300% for Frootloops.com and CornPops.com, and 150% for AppleJacks.com.
- Children were at least 3.2 times more likely than adults to visit all child-targeted sites.
- All companies increased banner advertising on youth websites for most child brands.
 - General Mills increased banner advertising for all but one and began promoting Cinnamon Toast Crunch.
 - Kellogg and Post more than doubled advertising for Frosted Flakes, Rice Krispies, Froot Loops, and Pebbles.

Marketing to Hispanic and black youth

Marketing to Hispanic and black youth

Definitions	Definitions
Spanish-language TV	TV programming presented in Spanish cable and broadcast programming (e.g., Univision, Telemundo). GRPs for Spanish-language TV are calculated based on the number of Hispanic persons in Nielsen's viewer panel.
Website targeted ratio: Hispanic to non-Hispanic youth	The relative proportion of Hispanic youth (6-17 years) unique visitors to the website divided by the proportion of non-Hispanic youth (6-17 years) visitors. For example, if the Hispanic youth to non-Hispanic youth targeted ratio for a website is 2.0, then Hispanic youth are twice as likely to visit the website compared with non-Hispanic youth.
TV targeted ratio: Black to white children	GRPs for black 2- to 11-year olds divided by GRPs for white 2- to 11-year olds. Provides a measure of relative exposure to TV advertising for black children compared to white children.
TV targeted ratio: Black to white adolescents	GRPs for black 12- to 17-year-olds divided by GRPs for white 12- to 17-year-olds. Provides a measure of relative exposure to TV advertising for black adolescents compared with white adolescents.
Website targeted ratio: Black to all youth	Provides the relative proportion of black youth (6-17 years) unique visitors to the website divided by the proportion of all youth (6-17 years) visitors.

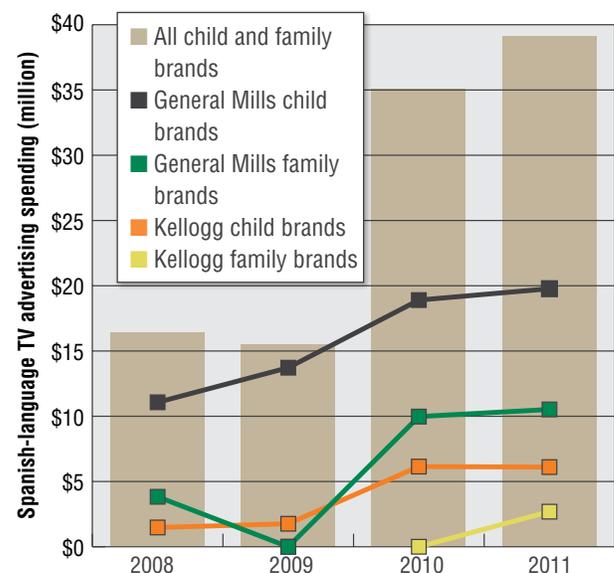
This section documents exposure to cereal advertising by Hispanic and black youth, and compares their exposure to that of non-Hispanic and white youth. By definition, advertising on Spanish-language TV is targeted to Hispanics. In addition, we report ratios of exposure to identify potential targeted marketing to black children and adolescents on TV and to black and Hispanic youth on child-targeted websites. If Hispanic or black youth viewed relatively more ads for cereal brands than their non-Hispanic or white peers viewed, companies may have targeted Hispanic and black youth with their advertising.¹²

Advertising on Spanish-language TV

In the past four years, spending on Spanish-language TV advertising for all cereals increased by 156%, from \$25.5 million in 2008 to \$65.2 million in 2011. Spending on child brands doubled during the period, to \$19.8 million for General Mills and \$10.5 million for Kellogg in 2011. The two companies also advertised family brands on Spanish-language TV, but at a lower level (\$8.8 million in total). In addition, Kellogg, Post, and General Mills each advertised at least one adult brand on Spanish TV, and advertising for adult brands almost tripled to \$26.0 million in 2011. The total number of brands that advertised on Spanish-language TV increased from 4 in 2008 to 11 in 2011.

Figure 10 illustrates the sharp increase in advertising spending on Spanish-language TV by General Mills and Kellogg for child and family brands from 2008 to 2011. Just three child and family brands advertised on Spanish-language TV in 2008: General Mills Honey Nut and regular Cheerios and Kellogg Frosted Flakes. In 2010, General Mills added Spanish-language advertising for Cinnamon Toast Crunch, and Kellogg began advertising Froot Loops. Kellogg added Spanish ads for Mini-Wheats in 2011.

Figure 10. Trends in Spanish-language TV advertising spending for child and family brands by company



Source: Nielsen

Table 12 presents exposure to Spanish-language TV advertising by Hispanic preschoolers (2-5 years), children (6-11 years), and adolescents (12-17 years). Hispanic youth exposure to cereal advertising on Spanish-language TV differed from youth exposure to advertising on English TV in several ways. First, in contrast to small reductions in children's exposure to cereal ads on English TV, exposure to Spanish-language ads more than doubled from 2008 to 2011 for all Hispanic youth. In addition, whereas children saw more cereal ads on English-language TV compared with all other age groups, Hispanic adults saw the most ads on Spanish-language TV (136 ads in 2011). Among Hispanic youth, preschoolers (2-5 years) viewed more cereal ads in

Table 12. Exposure to Spanish-language TV ads by Hispanic youth

Company	Spanish-language TV ads viewed					
	Preschoolers (2-5 years)		Children (6-11 years)		Adolescents (12-17 years)	
	2008	2011	2008	2011	2008	2011
Child brands	22	38	13	28	13	24
General Mills	15	26	9	20	9	17
Kellogg	7	13	4	8	4	8
Family brands	4	12	3	9	3	8
General Mills	4	10	3	7	3	6
Kellogg	0	3	0	2	0	2
Adult brands/company ads	15	39	10	28	9	25
Kellogg	2	10	1	8	1	7
Post	10	20	6	14	6	14
General Mills	3	9	2	7	2	6
Total	41	90	26	66	25	58

Source: Nielsen

total than either children or adolescents saw; this relationship was observed for all child and family brands. Finally, Hispanic youth viewed as many ads for adult brands as they viewed for child brands on Spanish-language TV; ads for family brands were viewed less frequently.

Ranking Table 7 provides Spanish-language TV advertising spending by brand, as well as Hispanic children's exposure to these ads. In 2011, General Mills brands accounted for approximately one-half of advertising spending on Spanish-language TV and one-half of exposure to cereal ads among all Hispanic age groups. Although Kellogg spent more than twice as much as Post, exposure to TV ads for Kellogg brands was approximately 25% higher for all age groups. In 2008, Honey Nut Cheerios represented 43% of all cereal spending on Spanish-language TV. However, by 2011, Honey Nut Cheerios' share of spending on Spanish-language TV had declined to just 19%, despite a 12% increase in its budget. One adult Post brand (Honey Bunches of Oats), had the second highest spending on Spanish-language TV and the highest exposure levels for all age groups. General Mills Cinnamon Toast Crunch ranked third in advertising spending and exposure for adults, while Cinnamon Toast Crunch and regular Cheerios tied for third among children and adolescents. Cinnamon Toast Crunch also devoted the highest percentage of its TV advertising budget to Spanish-language (29%), while Mini-Wheats had the lowest (6%).

Exposure to TV advertising by black youth

From 2008 to 2011, exposure to cereal advertising on TV increased more for black youth relative to their white peers. In 2011, black children (2-11 years) viewed 885 cereal ads on TV (2.4 ads per day) and black adolescents (12-17 years) viewed 705 (1.9 ads per day). These numbers were 8% higher than ads viewed in 2008 for black children and 16%

higher for adolescents. In contrast, the number of cereal ads viewed by white children declined by 5% during the same period, and ads viewed by white adolescents increased by just 3%. As a result, black to white targeted ratios increased from 1.25 to 1.42 for children and from 1.50 to 1.69 for adolescents.

Black children also viewed 13% more TV ads in 2011 versus 2008 for child brands overall and 127% more ads for family brands, with increases for 12 of 17 individual child and family brands advertised on TV (see **Table 13**). Compared with white children, black children viewed 30% more TV ads for child brands in total. However, they viewed 70% more ads for Rice and Cocoa Krispies and 80% to 100% more ads for each of the four family brands advertised on TV. Increases in black adolescents' exposure to TV ads totaled 19% for child brands and 123% for family brands. Black adolescents also viewed approximately 70% more TV ads compared with white adolescents, and black to white targeted ratios for adolescents were similar for all child and family brands.

These differences in ad exposure for black and white youth were comparable to differences in TV viewing times. In 2011, black children watched 50% more TV compared with white children and black adolescents watched 67% more than white adolescents.¹³ Therefore, it does not appear that cereal companies specifically targeted black youth with their TV advertising.

Hispanic and black youth visitors to child-targeted websites

Hispanic youth (6-17 years) were more likely to visit all child-targeted advergaming websites compared with non-Hispanic youth (see **Table 14**). RiceKrispies.com (a primarily adult-targeted site) was the only website in our analysis that had relatively fewer Hispanic than non-Hispanic youth

Table 13. Black youth exposure to TV ads for child and family brands

Company	Brand	Children (2-11 years)				Adolescents (12-17 years)			
		Ads viewed		Targeted ratio: Black to white		Ads viewed		Targeted ratio: Black to white	
		2008	2011	2008	2011	2008	2011	2008	2011
Child brands		594	670	1.2	1.3	369	438	1.5	1.7
Kellogg	Rice and Cocoa Krispies	17	5	1.9	1.7	23	7	1.5	1.7
General Mills	Honey Nut Cheerios	66	85	1.2	1.4	43	66	1.6	1.8
General Mills	Cinnamon Toast Crunch	72	91	1.2	1.4	45	64	1.5	1.7
Kellogg	Frosted Flakes	57	61	1.2	1.4	35	53	1.6	1.7
Kellogg	Corn Pops	41	14	1.3	1.3	32	10	1.7	1.8
General Mills	Reese's Puffs	42	71	1.1	1.3	23	40	1.5	1.7
General Mills	Lucky Charms	65	68	1.1	1.3	36	38	1.5	1.7
Post	Pebbles	43	57	1.2	1.3	25	33	1.6	1.7
Kellogg	Froot Loops	37	68	1.2	1.3	21	42	1.6	1.7
General Mills	Trix	42	60	1.1	1.3	23	34	1.5	1.7
General Mills	Cookie Crisp	27	24	1.1	1.3	14	13	1.5	1.7
General Mills	Cocoa Puffs	57	55	1.1	1.3	31	31	1.5	1.7
Kellogg	Apple Jacks	30	11	1.2	1.3	17	6	1.6	1.6
Family brands		36	82	1.7	1.9	48	107	1.3	1.7
General Mills	Chex	0	15	-	2.0	0	19	-	1.7
General Mills	Cheerios (regular)	9	28	1.6	1.9	12	36	1.5	1.7
Kellogg	Mini-Wheats	16	24	1.8	1.9	21	33	1.3	1.7
General Mills	Cheerios (except regular and Honey Nut)	6	16	1.7	1.8	7	19	1.3	1.5

Source: Nielsen

visitors. The two cereal websites with the most youth visitors overall (FrootLoops.com and AppleJacks.com) also had the most Hispanic youth visitors. However, General Mills' child-targeted sites were relatively more popular with Hispanics; Hispanic youth were at least 50% more likely to visit five General Mills child-targeted sites compared with non-Hispanics. ReesesPuffs.com had the highest Hispanic to non-Hispanic youth targeted ratio: Hispanic youth were

2.3 times more likely to visit ReesesPuffs.com. On average, 8,200 Hispanic young people visited the site every month, making it the third most visited cereal website for Hispanic youth (compared with #6 for all youth).

Black youth (6-17 years) were also more likely to visit 8 of 11 child-targeted websites in our analysis compared with white youth (see **Table 15**). CornPops.com and

Table 14. Hispanic youth visitors to websites with child content

Company	Website	Hispanics (6-17 years)	
		Average monthly unique visitors (000)	Targeted ratio: Hispanics to non-Hispanics
General Mills	ReesesPuffs.com	8.2	2.3
General Mills	LuckyCharms.com	7.6	1.9
General Mills	TrixWorld.com	2.4	1.8
General Mills	HoneyDefender.com	5.6	1.7
General Mills	HoneyNutCheerios.com	1.5	1.6
Kellogg	AppleJacks.com	13.8	1.4
Kellogg	FrostedFlakes.com	4.3	1.4
Kellogg	CornPops.com	5.9	1.3
Post	PebblesPlay.com	3.1	1.3
Kellogg	FrootLoops.com	15.5	1.1
Kellogg	RiceKrispies.com	0.5	0.5

Source: comScore Media Metrix Key Measures Report (January – December 2011)

Table 15. Black youth visitors to websites with child content

Company	Website	Blacks (6-17 years)	
		Average monthly unique visitors (000)	Targeted ratio: Black to all youth
General Mills	TrixWorld.com	6.8	4.0
Post	PebblesPlay.com	9.8	2.0
General Mills	ReesesPuffs.com	9.0	1.9
General Mills	LuckyCharms.com	16.2	1.8
Kellogg	FrostedFlakes.com	8.3	1.5
Kellogg	AppleJacks.com	34.3	1.4
General Mills	HoneyDefender.com	11.8	1.4
Kellogg	FrootLoops.com	32.6	1.3
Kellogg	RiceKrispies.com	2.9	1.2
Kellogg	CornPops.com	11.9	1.0
General Mills	HoneyNutCheerios.com	0.7	0.5

Source: comScore Media Metrix Key Measures Report (January – December 2011)

HoneyNutCheerios.com were the only websites visited disproportionately less often by black youth. Black youth visited the AppleJacks.com and FrootLoops.com websites most often, averaging more than 30,000 unique visitors per month in 2011. In addition, LuckyCharms.com, CornPops.com, and HoneyDefender.com averaged more than 10,000 black youth visitors per month. Black youth were four times more likely to visit TrixWorld.com compared with all youth, and almost twice as likely to visit PebblesPlay.com, ReesesPuffs.com, and LuckyCharms.com.

Summary of marketing to Hispanic and black youth

From 2008 to 2011, Spanish-language TV advertising for cereals, including child brands, more than doubled and Hispanic youth exposure to these ads increased by 2.5 to 3 times. In addition, black children did not experience the decline in TV advertising exposure experienced by white children from 2008 to 2011, but saw substantial increases, especially for child and family brands. However, differences in exposure to TV ads for white and black youth were comparable to differences in the amounts of TV they viewed. Black and Hispanic youth visited nearly all child-targeted websites disproportionately more often compared with all youth and non-Hispanic youth.

Marketing to Hispanic and Black Youth

Changes for the better

- No positive changes were found

Changes for the worse

- The number of cereal brands that advertised on Spanish-language TV increased from four in 2008 to 11 in 2011; spending increased by 156%.
- Hispanic preschoolers' exposure to cereal ads on Spanish-language TV increased by 120% and children's exposure increased 154%.
- Black children saw 8% more cereal ads on TV in 2011 versus 2008, and black adolescents saw 16% more. In contrast, white children saw 5% fewer ads, and white adolescents saw just 3% more. Black children's exposure to ads for child brands increased by 13%.
- Child-targeted sites were more popular with Hispanic than non-Hispanic youth, especially the General Mills sites.
- Black youth were more likely to visit eight child-targeted websites compared with all youth.

Total cereal advertising exposure

Total cereal

advertising exposure

Definitions

TV gross ratings points (GRPs) Measure of the per capita number of TV advertisements viewed by a specific demographic group (e.g., children 2-11 years) over a specific period of time (e.g., one year). GRPs divided by 100 provide the number of ads viewed by the demographic group, on average, for the time period.

Website GRP equivalents Measure of website exposure comparable to TV GRPs, defined as the percentage of the demographic group visiting the website during a specific time period multiplied by the amount of time spent on the site times 100.

Banner ad GRP equivalents Measure of the per capita number of banner advertisements viewed by visitors to youth websites during the year. Provides an exposure measure comparable to TV GRPs.

Due primarily to the discontinuation of Millsberry.com, the most popular and engaging child-targeted website in 2008, total child exposure to advertising for child and family brands declined by 31%, from an estimated 951 ads in 2008 to 653 in 2011. **Table 16** provides child and adolescents exposure to TV and internet advertising for child and family brands. Exposure to TV ads for General Mills brands increased, but exposure to its child-targeted websites and banner ads

declined, resulting in 34% less total exposure to General Mills advertising in total. Exposure to Kellogg advertising in total declined by 4%; increases in website visits and banner ads for its brands were offset by a reduction in TV ad exposure. Children were exposed to 42% fewer total ads for Post cereals, including fewer TV and banner ads (due to the discontinuation of Postopia.com) and lower website exposure.

Table 16. Child (2-11 years) exposure to TV and internet advertising for child and family brands

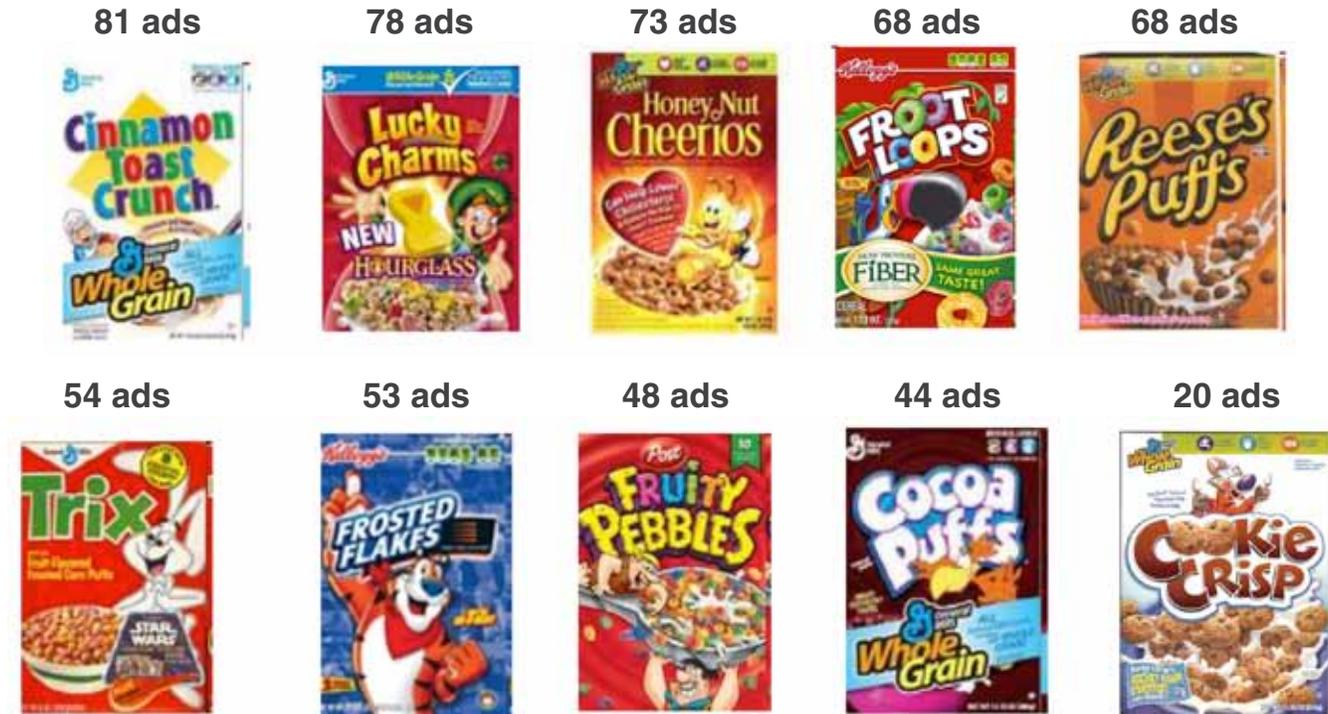
Company	Brand	TV GRPs		Website GRP equivalents		Banner ad GRP equivalents		Average total ad exposure*	
		2008	2011	2008	2011	2008	2011	2008	2011
General Mills	Cinnamon Toast Crunch	6,308	6,750	262	0	599	1,346	71.7	81.0
General Mills	Lucky Charms	5,804	5,332	2,898	14	8,390	2,421	170.9	77.7
General Mills	Honey Nut Cheerios	5,867	6,402	2,876	14	6,808	868	155.5	72.8
Kellogg	Froot Loops	3,222	5,525	14	84	589	1,211	38.2	68.2
General Mills	Reese's Puffs	3,723	5,656	328	19	749	1,090	48.0	67.6
General Mills	Trix	3,785	4,770	2,985	2	7,909	611	146.8	53.8
Kellogg	Frosted Flakes	4,581	4,612	0	8	76	697	46.6	53.2
Post	Pebbles	3,796	4,669	765	12	102	177	46.6	48.6
General Mills	Cocoa Puffs	5,018	4,409	0	0	0	0	50.2	44.1
General Mills	Cookie Crisp	2,356	1,950	2	0	0	0	23.6	19.5
General Mills	Cheerios (regular)	841	1,672	5	1	358	174	12.0	18.5
Kellogg	Apple Jacks	2,584	874	29	51	616	650	32.3	15.7
Kellogg	Mini-Wheats	964	1,329	0	0	40	106	10.0	14.4
Kellogg	Corn Pops	3,450	1,096	8	46	614	120	40.7	12.6
General Mills	Cheerios (except regular and Honey Nut)	485	1,086	0	0	0	0	4.9	10.9
General Mills	Chex	48	818	2	0	0	0	0.5	8.2
Kellogg	Rice and Cocoa Krispies	1,000	282	5	2	80	332	10.9	6.2
Quaker	Life	377	0	0	0	0	0	3.8	0.0
Post	Honeycomb	2,921	0	744	0	100	0	37.6	0.0
Company	TV GRPs		Website GRP equivalents		Banner ad GRP equivalents		Average total ad exposure*		
	2008	2011	2008	2011	2008	2011	2008	2011	
General Mills	34,235	38,845	9,358	51	24,812	6,509	684	454	
Kellogg	15,801	13,718	56	191	2,015	3,117	179	170	
Post	6,717	4,669	1,509	12	202	177	84	49	
Quaker	377	0	0	0	0	0	4	0	

*Total GRPs/100

Despite overall declines in advertising exposure, children continued to view 44 to 81 ads each for nine child cereal brands in 2011. General Mills brands represented seven of the child brands advertised most to children (see **Figure 11**). Two Kellogg brands and one Post brand also made the list. With two exceptions, the brands on the top-10 list in 2011

were the same brands on the top-10 list in 2008. Kellogg Corn Pops was number nine in 2008, but fell to 13th in 2011. In 2011, General Mills Cookie Crisp made the list at number ten. Cinnamon Toast Crunch overtook Lucky Charms, Honey Nut Cheerios and Trix (the three products advertised most in 2008) as the most advertised child or family brand in 2011.

Figure 11. Brands advertised most to children in 2011*



*Average total ads viewed by children (2-11 years) in 2011 on TV and the internet

Cereal companies have made some progress in improving the nutritional quality of children's cereals. However, they continue to aggressively market their least nutritious products directly to young children.

In the first Cereal FACTS report, we urged cereal companies to help improve children's diet and health by substantially reducing marketing of their least nutritious products directly to children and finding creative ways to encourage children to consume the healthful products in their portfolios. Cereal FACTS 2012 documents their progress in achieving these objectives. Specifically, the report quantifies changes in the nutritional quality of ready-to-eat cereals and children's exposure to cereal-company marketing from 2008 to 2012. Although we did find some changes for the better, General Mills, Kellogg, and Post continue to pursue a marketing strategy that bombards young children with TV and other advertising for high-sugar cereals, while promoting their more nutritious family cereals to parents and reserving their most nutritious products for advertising to adults for their own consumption. These findings also highlight numerous limitations to the potential effectiveness of industry self-regulatory initiatives in improving children's diet and health.

Changes for the better

Since the first Cereal FACTS was published in 2009, General Mills, Kellogg, and Post have all committed to improving the nutritional quality of their children's cereals.¹⁻³ General Mills and Kellogg delivered on this promise with reductions in sodium. General Mills also reduced the sugar in its child brands and is halfway towards fulfilling its promise to reduce the sugar per serving to "single digits."⁴ As of May 2012, 5 of 10 varieties of General Mills' advertised child brands had 9 grams of sugar per serving. Only Post did not deliver on its promise. The company introduced a new variety of Pebbles (Boulders Chocolate Peanut Butter) that contains 8 grams of sugar and 2 grams of fiber per serving, but the nutritional quality of its other Pebbles cereals worsened due to a reduction in fiber. However, from 2006 to 2012, the overall quality of children's cereals steadily improved, and new varieties introduced since 2009 were better than previously existing products.

These analyses also highlight reductions in child-targeted advertising for some brands. Arguably the most consequential change was that General Mills and Post discontinued their Millsberry.com and Postopia.com websites. In 2008, 387,000 children visited Millsberry.com and averaged 66 minutes on the site every month.⁵ Visits to Postopia.com were approximately one-half as frequent (154,000 children averaging 30 minutes per month). An analysis conducted in 2009 showed that Millsberry.com ranked first among all food company-sponsored advergame sites in number of child visitors and time spent on the

websites; while Postopia ranked sixth in unique child visitors and second in time spent.⁶ With the discontinuation of Millsberry.com, General Mills also reduced banner advertising on youth-targeted websites by 43%. We estimate that the discontinuation of these websites resulted in children viewing on average 295 fewer cereal ads per year, a reduction of 31% of total ad exposure from 2008. Cap'n Crunch and Enviroidz Organic also discontinued their child-targeted websites, although these sites did not have enough visitors to measure exposure through comScore in 2008.

On TV, Post stopped advertising Honeycomb, and Kellogg and General Mills reduced advertising to children for three child brands each (Corn Pops, Apple Jacks, Rice and Cocoa Krispies, Lucky Charms, Cocoa Puffs, and Cookie Crisp). In total, children viewed 21 fewer TV ads for Kellogg children's cereals and 20 fewer ads for Post children's cereals in 2011 versus 2008. These reductions were greater for preschoolers, who saw 19% fewer ads for Kellogg children's cereals and 33% fewer ads for Post children's cereals.

Changes for the worse

From 2008 to 2011, despite reductions in TV advertising for three brands, total exposure to TV advertising for General Mills child and family cereals increased by 10% for preschoolers (2-5 years) and by 16% for children (6-11 years). General Mills advertised four of its child brands more in 2011 compared with 2008, posting increases in ads viewed by children of 55% for Reese's Puffs and 29% for Trix. As a result, General Mills' share of children's exposure to TV ads for child and family cereal brands increased from 61% in 2008 to 68% in 2011. Kellogg also increased TV advertising for two child brands, and Post increased ads for its one child brand. Children saw 79% more ads for Froot Loops, 25% more ads for Pebbles, and 6% more ads for Frosted Flakes in 2011 versus 2008.

The discontinuation of popular cereal company-sponsored advergame websites and associated banner advertising was also partially offset by the introduction of new child-targeted websites and increased banner advertising for individual brands and existing websites. Post replaced Postopia.com with PebblesPlay.com, and General Mills introduced advergame sites for Honey Nut Cheerios (HoneyDefender.com) and Cinnamon Toast Crunch (CrazySquares.com). In addition, Kellogg nearly doubled banner advertising for its child brands; General Mills increased banner advertising for Honey Nut Cheerios (+185%) and Lucky Charms (+58%) and began advertising Cinnamon Toast Crunch on third-party children's websites; and banner advertising doubled for Post Pebbles.

Advertising spending to promote children's cereals also increased by 34%, and companies spent more to advertise child brands than they spent on adult brands in 2011.

Conversely, in 2008 they had spent 41% more to advertise adult brands versus child brands. Although children (6-11 years) saw similar numbers of TV ads for these products in 2011 and 2008, and preschoolers (2-5 years) saw 8% fewer in 2011, companies increased their advertising to other age groups and in other media. For example, adolescent exposure to TV ads for General Mills children's cereals increased by 35%, indicating that the company may be refocusing its marketing on a somewhat older youth audience. In addition, General Mills increased spending on internet advertising for child and family brands by 49%, investing \$2.4 to \$3.1 million each to advertise Honey Nut Cheerios, Lucky Charms, and Cinnamon Toast Crunch online in 2011. All three brands also posted increases in banner advertising on youth websites, an advertising medium that is less expensive than TV and more difficult for parents to monitor. Lucky Charms devoted the highest proportion of its budget (20%) to internet advertising. Kellogg and Post also appear to have increased their focus on advertising directed to parents. Both companies more than doubled advertising in magazines (to \$28 million by Kellogg and \$5 million by Post), outpacing General Mills in this medium. Kellogg also increased TV advertising to adults for Froot Loops (up three-fold) and Frosted Flakes (+77%).

Finally, Hispanic and black youth exposure to cereal advertising increased from 2008 to 2011. This trend raises concerns for public health as these young people also face the highest rates of obesity and related disease.⁷ Cereal companies increased targeted marketing to Hispanics on Spanish-language TV. Advertising spending on this medium increased 2.5 times from 2008 to 2011. In 2008, four brands advertised on Spanish-language TV. By 2011, seven additional brands had Spanish TV campaigns, including Froot Loops and Cinnamon Toast Crunch. As a result, exposure to cereal ads on Spanish-language TV increased by 120% for Hispanic preschoolers and 154% for 6- to 11-year-olds – on top of the ads they viewed on English TV. In addition, although white children saw 5% fewer TV ads for child brands in 2011 versus 2008, black children saw 8% more of these ads. Black adolescents also had an increase of 13% in TV ads viewed for child brands, while white adolescents viewed just 3% more. Hispanic and black children were also more likely to visit the majority of child-targeted websites compared with non-Hispanic and all children.

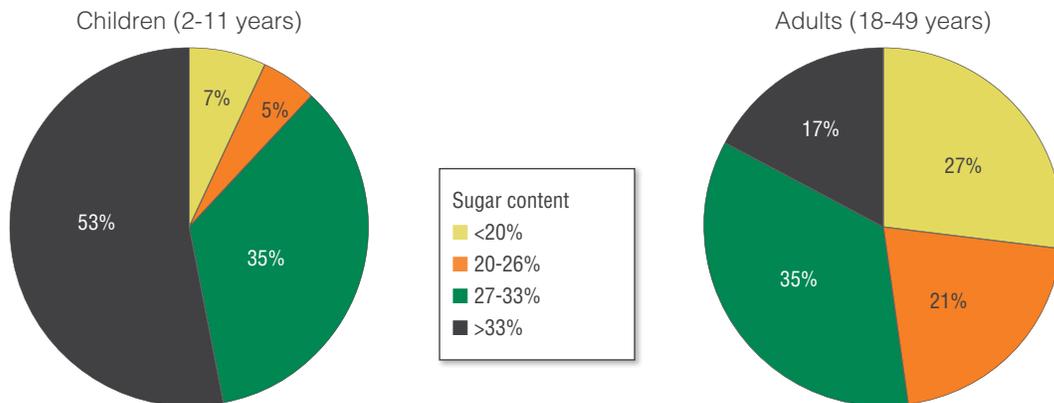
More of the same

The net effect of these changes is that cereal marketing to children in 2012 looks much the same as it did in 2009. Cereal companies continue to market their least nutritious products directly to children. Companies do make nutritious cereals. For example, regular Cheerios and many varieties of Mini-Wheats have some of the highest nutrition scores of all cereals, but General Mills and Kellogg market these

products to parents, not directly to children. However, companies continue to target their most nutritious products to adults for adult consumption. The cereals marketed to children contain 56% more sugar, 52% less fiber, and 50% more sodium compared with adult-targeted cereals.

Children also continue to see more advertising for cereals than for any other category of packaged food or beverage.⁸ In 2011, cereal ads represented 22% of all TV ads for packaged foods viewed by children, down slightly from 25% in 2007. However, on average, preschoolers (2-5 years) saw 1.6 cereal ads *every day* in 2011, and children (6-11 years) saw 1.9 ads. Children also saw 53% more cereal ads in total than adults saw, and 80% of these ads promoted child brands (i.e., the least nutritious products) compared with 36% of cereal ads viewed by adults. On the internet, a few cereal company-sponsored websites received as many child visitors during some quarters in 2011 as the most popular sites sponsored by other food companies. For example, FrootLoops.com averaged 162,000 child visitors per month in 2011 and AppleJacks.com averaged 116,000. With just one quarter of data available on comScore in 2011, HoneyDefender.com averaged 171,000 child visitors per month. These numbers are comparable to the 189,000 children who visited McDonald's HappyMeal.com per month in 2009 (the second most popular food company site for children, after Millsberry.com).⁹ In addition, children were exposed to an estimated 98 ads on average in 2011 for children's cereals on popular children's websites, such as Nick.com and Disney.com.

The bottom line is that General Mills, Kellogg, and Post continue to aggressively target children with advertising for products such as Reese's Puffs, Froot Loops, and Pebbles that rank at the bottom of their products in nutrition and at the top in added sugar. The majority of cereal advertisements that children see on TV (53%) promote products consisting of one-third or more sugar (see **Figure 12**). One 30-gram serving of these cereals contains as much sugar as 30 grams of Chips Ahoy cookies (3 cookies). Just 12% of the cereal TV ads viewed by children promote products with 26% or less sugar, compared with nearly one-half of ads seen by adults. Although the 9 or 10 grams of sugar per serving in children's cereals today is less than the 14 or 15 grams these products contained six years ago, they are still high-sugar products that children should not consume regularly. Our research shows that children will consume on average 61 grams of these cereals for breakfast (approximately twice the indicated serving size),¹⁰ adding up to 21 grams (more than 5 tsp) of sugar. However, the American Heart Association recommends that children consume no more than 20 grams of added sugar per day.¹¹ Before they leave the house in the morning, children eating these presweetened cereals will have consumed as much sugar as they should eat in an entire day.

Figure 12. Sugar content of cereals in TV ads viewed

Limitations of industry self-regulation

This analysis points out several shortcomings of the Children's Food and Beverage Advertising Initiative (CFBAI), the food industry's self-regulatory program on food marketing to children. We did not find any evidence that companies were not technically complying with their pledges on advertising to children. However, numerous examples in this report illustrate how loopholes in the pledges allow companies to continue to market to children to increase consumption of their least nutritious products.

Nutritious versus "improved nutrition profile"

As has been noted in recent evaluations of food advertising to children,^{12,13} CFBAI companies established their own nutrition criteria for products that may be in child-directed advertising. As our findings illustrate, these criteria do not align with standards established by government organizations to identify nutritious products that children should consume. Just two of the cereals approved by companies to include in child-directed advertising met the nutrition criteria established by the U.S. Interagency Working Group on Food Marketed to Children (IWG), the Office of Communications (OFCOM) in the United Kingdom, or the U.S. Department of Agriculture (USDA) Women, Infants and Children (WIC) supplemental food program. The new CFBAI uniform nutrition criteria scheduled to be implemented by 2013 also fall short of these standards in limits on sugar (10 g per serving) and sodium (290 mg per serving). In addition, they allow companies to satisfy the requirement for "nutrition components to encourage" through fortification, rather than requiring foods to contain a meaningful amount of healthful food groups (e.g., whole grains).¹⁴

These differences in nutrition standards highlight a key discrepancy between public health objectives of "improving children's diets and addressing the high rates of childhood

obesity" through marketing to children (the goal of the IWG) and the food industry's goal for self-regulation. The CFBAI claims success in enhancing "the nutrition profile of foods advertised to kids"¹⁵ – and our data concur that companies have improved the nutrition profile of the high-sugar cereals that have traditionally been advertised directly to children. However, these improvements do not make products such as Reese's Puffs, Froot Loops, or Cocoa Pebbles nutritious foods that will help improve children's diet and health.

This discrepancy is especially meaningful in the cereal category where companies already have nutritious products in their portfolios. However, rather than advertise their more nutritious cereals in place of high-sugar children's cereals, companies have chosen to discredit the stronger criteria. For example, in discussing the IWG recommended nutrition standards, General Mills claimed that "literally all cereals marketed by General Mills would be barred from advertising,"¹⁶ and the CFBAI commented that "the IWG's specific goals for nutrients to limit and for food groups to include exceed what reasonably can be accomplished within five years."¹⁷ In apparent contradiction to these statements, 27% of the family cereals we evaluated and 49% of adult cereals met the IWG limits on sugar, fat, and sodium, including 11 varieties of Kellogg Frosted Mini-Wheats and one Cheerios variety. Therefore, cereal companies already make nutritious products that meet independent nutrition standards and could be advertised to children, if they chose to do so. Of note, General Mills and its Cascadian Farm subsidiary had 10 cereals that met the IWG nutrient limits, whereas Kellogg and its Kashi subsidiary had 35.

Defining "child-directed advertising"

The second major limitation of food marketing self-regulation through the CFBAI is companies' definitions of child-directed advertising (i.e., the types of marketing in which they may advertise only products that meet their nutrition standards),

which exclude many forms of marketing commonly used to promote foods to children. Although the marketing we examined technically complied with cereal companies' CFBAI pledges, we found that these pledges do not accomplish what they appear to promise.

Perhaps most egregious is that cereal companies continue to advertise to children under age 6 extensively on TV and the internet. General Mills has pledged it "will not target any advertising to preschool children,"¹⁸ and Kellogg promises to "continue its practice of not advertising to children under the age of 6 years."¹⁹ However, as this report documents, preschoolers saw on average 471 TV ads for child brands in 2011 (1.3 ads per day), just 19% fewer ads than seen by children in cereal companies' purported target market (6- to 11-year-olds). On Spanish-language TV, preschoolers saw more ads for all advertised brands than either children or adolescents saw. Despite company pledges to the contrary, preschoolers continue to see hundreds of TV ads for cereals because the CFBAI defines advertising directed to children under 6 as advertising that occurs in media in which children under 6 make up 35% or more of the audience.²⁰ We challenge these companies to provide one example of programming with an audience consisting of 35% or more children under 6 that accepts commercial advertising. In effect, this criterion is meaningless.

Similarly, Kellogg has a "Playground" section of its adult-targeted Rice Krispies website that contains advergames, including a section entitled "Pre-K Games."²¹ However, this website does not meet the company's definition of "advertising directed to children under 6" as the entire site contains predominantly adult content. Therefore, children under 6 do not make up 35% or more of the audience. Of note, one Pre-K game on RiceKrispies.com is entitled, "Ready! Aim! Cocoa!" in which players fling cocoa beans into bowls of chocolate cereal pieces, even though Kellogg does not include Cocoa Krispies on its list of products that may be featured in child-directed advertising.

Signs of things to come?

This research also uncovered some new developments in the marketing of children's cereals. Companies have begun to introduce new technologically sophisticated forms of child-targeted marketing. For example, Kellogg launched a mobile version of the Apple Jacks "Race to the Bowl Rally" game that is also featured on its child-targeted website – the first food company-sponsored children's advergame adapted for use with smartphones and iPads.²² General Mills' Chief Marketing Officer promises interactive cereal boxes using quick response (QR) codes, "kids could point a smartphone at the box and 'see visual surprises.'"²³ He notes that the

concept has been tested on boxes of Honey Nut Cheerios. Although cereal companies did not appear to target children directly in social media, recent proposals to allow children to join Facebook would provide another avenue for cereal companies to reach children directly in a medium that is not "primarily directed to children."²⁴

Cereal companies also appear to have expanded advertising to a somewhat older youth audience who are not protected by CFBAI pledges (i.e., children older than 12). For example, children (6-11 years) saw 6% more TV ads for Frosted Flakes in 2011 versus 2008, while adolescents (12-17 years) saw an increase of 41%. Similarly, children saw 11% more Cinnamon Toast Crunch ads compared with 31% more for adolescents. The World Health Organization (WHO)²⁵ and the IWG²⁶ recommend additional protections from food marketing for this slightly older, but still vulnerable, age group. It is important to note that the CFBAI does not include "tweens" (i.e., 12- to 14-year-olds) in its definition of children, although advertisers specifically target this age group because they are highly susceptible to marketing influence.²⁷

Since 2008, cereal companies have increased appeals to parents using messages that imply nutrition benefits of high-sugar cereals. For example, General Mills promoted its Big G kids' cereals (Lucky Charms, Cocoa Puffs, Cinnamon Toast Crunch, and Trix) to parents in TV ads that proclaim "Give your kids more of what they need to do their best. Grow up strong with Big G kids' cereals." Similarly, Kellogg boasted "9 out of 10 kids don't get enough fiber... Kellogg makes Fiber fun!" Spanish-language magazine ads for Fruity and Cocoa Pebbles from Post encouraged parents to "Feed them with fun. Consent to your kids with delicious, crunchy flakes with Vitamin D." Our research has demonstrated that such messages mislead many parents into believing these products are healthier than other cereals and make them more likely to buy the products to serve their children.²⁸

Kellogg Krave cereal: A case study of loopholes in the CFBAI

Kellogg's introduction of Krave cereal in 2012 demonstrates how loopholes in the CFBAI allow companies to target products to a "tween" audience. Although this product meets Kellogg's current nutrition standards for foods that may be in advertising to children,^a the company does not list Krave as a product that may be in child-directed advertising.²⁹ However, analyses of exposure to TV ads for Krave cereal reveals that advertisers do not need to advertise in child-directed programming to reach large numbers of children. Children have seen more TV ads for Krave since its introduction than individuals in any other age group. From

^a It is not clear why Kellogg does not advertise Krave in child-directed programming as it meets Kellogg's current nutrition standards for foods that may be in child-directed advertising. There are currently two varieties of Krave; they contain 10-11 grams of sugar, 1 gram of saturated fat, and 95-100 milligrams of sodium per serving.

January through March 2012, children (6-11 years) saw an average of 11.2 Krave ads, adolescents (12-17 years) saw 10.6 ads, and adults (18-49 years) saw 4.9.³⁰ Although 70% of children's exposure to TV ads for Krave cereal occurred on Nickelodeon and Cartoon Network, these ads appeared during programs that are not "child-directed" according to the CFBAI. Programs such as "SpongeBob," "Adventure Time," and "Victorious" (the programs during which these ads appeared most often) have audiences consisting of less than 35% children under 12, and thus do not qualify as advertising "primarily directed to children."³¹

Within a few months, Krave also became one of the most popular cereal Facebook pages with more than 300,000 "likes" as of June 13, 2012. From January through March, Krave's Facebook page averaged 157,000 unique visitors each month – 24% of them were children 6-14 years old.³² Krave cereal boxes featured a QR code that connected to its Facebook page when scanned using a smartphone. Of note, the CFBAI does not include marketing messages on product packaging as advertising covered by company pledges.³³

Recommendations

Cereal companies have expressed a commitment to foster public health and be part of the solution to childhood obesity. However, they cannot do so by making incremental improvements in the sugar and sodium content of children's cereals, while continuing to aggressively market these products (their least nutritious cereals) to children as young as two years old. Foods that contain one spoonful of sugar in every three spoons of cereal are not healthful products that children should regularly consume.

In the first Cereal FACTS report, we encouraged cereal companies to replace advertising for high-sugar cereals with advertising to children for the nutritious products

in their portfolios. Yet the products featured in child-targeted advertising in this report are nearly identical to the products featured in the 2009 report. The CFBAI and cereal companies also protested more stringent nutrition standards for foods marketed to children as proposed by four U.S. government agencies, claiming they were too difficult to achieve.³⁴ However, our analysis revealed numerous cereals that meet the IWG limits on sugar, fat, and sodium. Our question remains, why can't cereal companies market Frosted Mini-Wheats or Wheaties Fuel directly to children using cartoon characters and fun, cool themes? Convincing children that they must have Reese's Puffs or Froot Loops may maximize corporate profits, but why is it acceptable?

We have asked cereal companies to stop advertising their least nutritious products directly to children, not to stop selling these products. Of the 124 cereal brands included in our analysis, the majority of brands were not advertised on TV at all. This request involves just 13 brands from General Mills, Kellogg, and Post that were advertised directly to children in 2011. Advertising to children increases product sales,³⁵ but it is not a prerequisite for companies to sell their products. Cap'n Crunch is an example of a brand that was previously targeted to children, but is now marketed to adults with a "nostalgia" theme. TV advertising for Cap'n Crunch also appears to have been discontinued. We have applauded PepsiCo for this shift in their marketing strategy.³⁶

The bottom line is that if General Mills, Kellogg, and Post truly want to help parents raise healthy children, they must:

- Significantly reduce the hundreds of advertisements for high-sugar cereals that children see every year; and
- Use their substantial resources and creativity to find ways to encourage children to consume the healthful products in their portfolios.

We urge them to do the right thing for children's health.

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Brand Nutrition

Ranking by overall nutritional quality (Nutrition Profile Index [NPI] score) in 2012

Includes nutrition information for child and family brands as of May 15, 2009 and May 1, 2012*

Best

Rank	Company	Brand	# of varieties	Average NPI score		2012 nutrition		
				2012	2009	NPI score range	Sugar content range (%)	
1	Kellogg	Mini-Wheats	11	↑	73	71	54-82	0-22
2	Kashi	Golden Goodness	1		72	-	72	13
3	General Mills	Cheerios (regular)	1	↑	70	58	70	4
4	Cascadian Farm	Purely O's	1	↑	58	46	58	3
4 (tie)	Quaker	Life Crunchtime	2		58	-	58	19-22
6	Barbara's Bakery	Puffins	6	↑	58	52	46-68	19-20
7	Barbara's Bakery	Puffins Puffs (formerly Organic Wild Puffs)	2	↓	56	58	54-58	23
8	Kashi	Kashi Squares (formerly Honey Sunshine)	2		55	56	54-56	20-23
9	General Mills	Kix	3	↑	54	51	52-56	10-21
9 (tie)	Cascadian Farm	Chocolate O's	1		54	-	54	29
11	Annie's	Bunnies	5	↑	53	50	50-64	7-28
12	Quaker	Life	3		53	53	52-54	19-25
13	General Mills	Dora the Explorer	1	↑	52	50	52	22
13 (tie)	Cascadian Farm	Clifford Crunch	1	↓	52	54	52	27
15	Nature's Path	Envirokidz Organic	5	↓	51	52	44-54	23-40
16	Post	Raisin Bran	1	↑	50	48	50	32
16 (tie)	Cascadian Farm	Cinnamon Crunch	1		50	50	50	30
16 (tie)	Cascadian Farm	Honey Nut O's	1	↑	50	44	50	23
16 (tie)	Cascadian Farm	Fruitful O's	1		50	-	50	29
16 (tie)	Kellogg	Corn Pops	1	↑	50	33	50	31
16 (tie)	Barbara's Bakery	Shredded Oats - Cinnamon Crunch	1		50	50	50	27
22	General Mills	Chex	7	↑	49	45	44-56	7-33
23	General Mills	Cheerios (except regular and Honey Nut)	8	↑	48	46	46-52	28-33
23 (tie)	Kellogg	Honey Smacks	1	↑	48	46	48	56
25	General Mills	Cookie Crisp	2	↑	47	38	46-48	33-35
25 (tie)	Kellogg	Frosted Flakes	2	↑	47	45	42-52	27-37
27	Kellogg	Rice and Cocoa Krispies	5	↑	47	41	38-64	3-40
28	Post	Golden Crisp	1		46	46	46	52
28 (tie)	General Mills	Honey Nut Cheerios	1	↑	46	44	46	32

continued

Brand Nutrition continued



Worst

Rank	Company	Brand	# of varieties	Average NPI score		2012 nutrition		
				2012	2009	NPI score range	Sugar content range (%)	
30	General Mills	Cocoa Puffs	2	↑	45	39	44-46	33-37
31	Post	Alpha Bits	1	↓	44	46	44	36
31 (tie)	Post	Waffle Crisp	1		44	44	44	40
31 (tie)	Kellogg	Apple Jacks	1	↑	44	40	44	43
34	Kellogg	Froot Loops	2	↑	43	39	42-44	41-48
35	General Mills	Golden Grahams	1	↑	42	36	42	32
36	General Mills	Lucky Charms	2	↑	42	36	42	36-37
36 (tie)	General Mills	Trix	1	↑	42	38	42	31
38	General Mills	Cinnamon Toast Crunch	2	↑	41	37	40-42	30-32
39	Kellogg	Smorz	1	↑	40	38	40	43
39 (tie)	Post	Honeycomb	1	↓	40	48	40	31
41	General Mills	Reese's Puffs	1	↑	38	34	38	34
42	Post	Pebbles	4	↓	33	40	26-50	30-37
43	Quaker	Cap'n Crunch	5	↓	31	38	28-38	33-47

Rank	Company	# of varieties	Average NPI score		2012 nutrition		
			2012	2009	NPI score range	Sugar content range (%)	
1	Kashi	3	↑	61	56	54-72	13-23
2	Kellogg	24	↑	58	49	38-82	0-56
3	Barbara's Bakery	9	↑	56	54	46-68	19-27
4	Annie's	5	↑	53	51	50-64	7-28
5	Cascadian Farms	6	↑	52	49	50-58	3-30
6	Nature's Path	5		51	52	44-54	23-40
7	General Mills	35	↑	48	44	38-70	4-37
8	Quaker	10		43	44	28-58	19-47
9	Post	9	↓	39	44	26-50	30-52

*Excludes seasonal brands

Advertising Spending

Ranking by total advertising spending in 2011

Includes total spending in all measured media for child and family brands*

Most

Least

Rank	Company	Brand	Total advertising spending (\$ million)		2011 advertising spending (\$ million)			
			2011	2008	TV	Magazines	Internet	
1	General Mills	Honey Nut Cheerios	↑	73.7	60.7	71.3	0	2.4
2	Kellogg	Mini-Wheats	↑	53.9	43.3	43.1	7.6	1.7
3	General Mills	Cheerios (regular)	↓	49.9	50.6	48.2	0	1.2
4	Kellogg	Frosted Flakes	↑	40.6	18.4	40.1	0	.5
5	Kellogg	Froot Loops	↑	35.7	7.9	28.2	6.6	1.0
6	General Mills	Cheerios (except regular and Honey Nut)	↑	34.8	23.9	30.4	3.2	1.1
7	General Mills	Cinnamon Toast Crunch	↑	29.0	15.7	25.8	0	3.1
8	Kellogg	Rice and Cocoa Krispies	↓	24.5	32.9	11.7	11.7	.9
9	General Mills	Chex	↑	19.0	9.3	17.5	1.3	< .1
10	Post	Pebbles	↑	13.6	7.4	6.7	5.2	.5
11	General Mills	Lucky Charms	↑	12.6	10.4	10.1	0	2.5
12	General Mills	Reese's Puffs	↑	9.8	6.2	8.9	0	.9
13	General Mills	Trix	↑	7.9	6.8	7.5	0	.4
14	General Mills	Cocoa Puffs	↓	7.1	7.8	7.0	0	0
15	Kellogg	Apple Jacks	↓	4.9	6.2	2.2	2.2	.5
16	Kellogg	Corn Pops	↓	2.7	8.3	2.6	0	.2
17	General Mills	Cookie Crisp	↓	2.1	4.0	2.1	0	0
18	Barbara's Bakery	Puffins	↑	.5	.3	.5	0	0
19	General Mills	Kix	↑	.1	0	0	0	0
20	Quaker	Life	↓	.1	12.0	0	0	0
21	Quaker	Cap'n Crunch	↓	.1	.2	0	0	0
	Post	Honeycomb	↓	0	4.3			
	Nature's Path	Envirokidz Organic	↓	0	.3			

Rank	Company	Total advertising spending (\$ million)		2011 advertising spending (\$ million)			
		2011	2008	TV	Magazines	Internet	
1	General Mills	↑	246.0	195.3	228.8	4.5	11.6
2	Kellogg	↑	162.3	116.3	127.8	28.1	4.8
3	Post	↑	13.8	11.8	6.7	5.2	.5
4	Barbara's Bakery	↑	.5	.3	.5	0	0
5	Quaker	↓	.2	12.1	0	0	0

*Includes spending in 18 different media including television, magazines, internet, radio, newspapers, free standing insert coupons and outdoor advertising

Source: Nielsen

Television Advertising Exposure

Ranking by ads viewed by children (6-11 years) in 2011

Includes average number of advertisements viewed for child and family brands in 2008 and 2011

Most
↓
Least

Rank	Company	Brand	Average # of ads viewed				Child:adult targeted ratio 2011
			Children (6-11 years)		Preschoolers (2-5 years)		
			2011	2008	2011	2008	
1	General Mills	Cinnamon Toast Crunch	↑ 72	65	61	61	2.5
2	General Mills	Honey Nut Cheerios	↑ 67	61	↑ 59	56	1.4
3	Kellogg	Froot Loops	↑ 60	33	↑ 49	30	3.4
4	General Mills	Reese's Puffs	↑ 60	38	↑ 52	35	6.9
5	General Mills	Lucky Charms	↓ 56	60	↓ 49	55	6.6
6	Post	Pebbles	↑ 52	41	↑ 39	33	6.4
7	Kellogg	Frosted Flakes	↑ 51	48	↓ 40	43	2.0
8	General Mills	Trix	↑ 50	39	↑ 44	36	6.8
9	General Mills	Cocoa Puffs	↓ 47	52	↓ 40	48	6.9
10	General Mills	Cookie Crisp	↓ 21	25	↓ 18	22	6.6
11	General Mills	Cheerios (regular)	↑ 18	9	↑ 15	7	0.5
12	Kellogg	Mini-Wheats	↑ 14	10	↑ 12	9	0.4
13	Kellogg	Corn Pops	↓ 12	36	↓ 9	32	5.1
14	General Mills	Cheerios (except regular and Honey Nut)	↑ 11	5	↑ 10	4	0.4
15	Kellogg	Apple Jacks	↓ 9	27	↓ 8	24	6.1
16	General Mills	Chex	↑ 9	1	↑ 8	0	0.4
17	Kellogg	Rice and Cocoa Krispies	↓ 3	10	↓ 3	9	0.4
	Quaker	Life	↓ 0	4	↓ 0	3	
	Post	Honeycomb	↓ 0	32	↓ 0	25	

Rank	Company	Average # of ads viewed				Child:adult targeted ratio 2011
		Children (6-11 years)		Preschoolers (2-5 years)		
		2011	2008	2011	2008	
1	General Mills	↑ 411	354	↑ 356	325	2.1
2	Kellogg	↓ 149	165	↓ 120	148	1.6
3	Post	↓ 52	73	↓ 39	58	6.4

Source: Nielsen

Website Exposure

Ranking by average total visits by 2- to 11-year-olds in 2011

Includes data for visits to websites with child-targeted content

Most
↓
Least

Rank	Company	Website	Average unique visitors per month (2-11 years)		2011 average***		
			2011 (000)	2008 (000)	Visits per month	Minutes per visit	Minutes per month
1	Kellogg	FrootLoops.com	↑ 161.9	41.5	1.4	3.1	4.4
2	Kellogg	AppleJacks.com	↑ 116.2	46.4	1.5	3.1	4.6
3	Kellogg	CornPops.com	↑ 59.5	14.3	1.6	5.0	7.8
4	General Mills	LuckyCharms.com	↑ 52.3	-	1.1	2.0	2.3
5	General Mills	HoneyDefender.com	↑ 42.7	-	1.2	2.8	3.4
6	General Mills	ReesesPuffs.com	↑ 29.3	6.4	1.1	4.0	4.6
7	Kellogg	FrostedFlakes.com	↑ 28.5	-	1.2	1.9	2.3
8	Post	PebblesPlay.com	↑ 25.1	-	1.1	3.5	4.0
9	General Mills	TriXWorld.com	↑ 12.4	-	1.1	1.5	1.6
10	Kellogg	RiceKrispies.com	↓ 5.3	12.4	1.1	2.4	2.7
11	General Mills	HoneyNutCheerios.com	↑ 4.7	-	1.1	0.7	0.8
12	Post	Postopia.com*	↓ 0.8	176.8			
	General Mills	CookieCrisp.com	↓ 0.0	2.0			
	General Mills	Millsberry.com*	↓ -	403.0			

Rank	Company	Website	Average unique visitors per month (2-11 years)**		2011 average***		
			2011 (000)		Visits per month	Minutes per visit	Minutes per month
1	Kellogg		339.3		1.4	3.1	4.3
2	General Mills		118.6		1.1	2.1	2.3
3	Post		25.2		1.2	3	3.6

*These websites have been discontinued

**Company-level data were not available for 2008

***Averages are for 2- to 17-year-olds

Source: comScore Media Metrix Key Measures Report

Banner Advertising Exposure

Ranking by average number of ad views on youth websites per month in 2011

Includes average monthly data for banner ads viewed for child and family brands from January–December 2011 and October 2008–March 2009

Most
↓
Least

Rank	Company	Brand	Average # of ad views*		2011 average		
			2011 (000)	2008-2009 (000)	Unique viewers (000)	Ads viewed per viewer	Proportion of ads viewed on youth websites
1	General Mills	Lucky Charms	↑ 35,295	22,400	6,246	7.2	71%
2	General Mills	Cinnamon Toast Crunch	↑ 19,618	0	7,028	4.9	55%
3	Kellogg	Froot Loops	↑ 17,658	6,998	3,439	4.7	83%
4	General Mills	Reese's Puffs	↑ 15,885	15,262	2,466	6.2	81%
5	General Mills	Honey Nut Cheerios	↑ 12,660	4,440	8,309	4.3	29%
6	Kellogg	Frosted Flakes	↑ 10,158	783	3,216	3.9	61%
7	Kellogg	Apple Jacks	↓ 9,476	9,538	3,642	3.9	62%
8	General Mills	Trix	↓ 8,905	10,531	1,705	6.0	75%
9	Kellogg	Rice and Cocoa Krispies	↑ 4,843	2,079	6,276	4.0	15%
10	Post	Pebbles	↑ 2,581	0	1,562	2.7	44%
11	General Mills	Cheerios (except Honey Nut)	↓ 2,534	2,636	--	--	3%
12	Kellogg	Corn Pops	↓ 1,756	4,591	552	3.8	79%
13	Kellogg	Mini-Wheats	↑ 1,549	290	--	--	4%
14	General Mills	Chex	↓ 2	3	--	--	0%

Rank	Company	Average # of ad views*	
		2011 (000)	2008-2009 (000)
1	General Mills	↓ 94,900	165,352**
2	Kellogg	↑ 45,441	24,280
3	Post	↑ 2,581	1,236***

*Average number of ad views on youth websites per month

**Includes banner ads for Millsberry.com in 2008-2009

***Includes banner ads for Postopia.com in 2008-2009

Source: comScore Ad Metrix Advertiser Report (January-December 2011)

Social Media

Ranking by number of “likes” on Facebook

Includes Facebook likes, Twitter followers, and YouTube views for child and family brands as of May 1, 2012 and Facebook posts and tweets in April 2012.

Most
↓
Least

Rank	Company	Brand	Facebook		Twitter		YouTube
			# of likes	Monthly posts	# of followers	Monthly tweets	# of views
1	General Mills	Cheerios (all)	741,331	13	5,136	1,429	17,496
2	Kellogg	Frosted Flakes	299,593	15			
3	Kellogg	Mini-Wheats	144,934	18			
4	Quaker	Cap'n Crunch	59,232	33	4,398	497	
5	Kellogg	Rice Krispies	24,150	15			
6	General Mills	Golden Grahams	20,306	0			277,369
7	Quaker	Life	2,109	0			
8	Nature's Path	Envirokidz Organic	950	2			14,137

Spanish-language TV

Ranking by Spanish-language advertising spending in 2011

Includes total spending for child, family, and adult brands and average number of TV ads viewed by Hispanic preschoolers and children

Rank	Company	Brand	Advertising spending (\$ million)		Average # of TV ads viewed			
					Hispanic preschoolers (2-5 years)		Hispanic children (6-11 years)	
			2011	2008	2011	2008	2011	2008
1	General Mills	Honey Nut Cheerios	↑ \$12.4	\$11.1	↑ 17	15	↑ 13	9
2	Post	Honey Bunches of Oats	↑ \$9.3	\$5.7	↑ 20	10	↑ 14	6
3	General Mills	Cinnamon Toast Crunch	↑ \$7.4	\$0.0	↑ 9	0	↑ 7	0
4	Kellogg	Frosted Flakes	↑ \$6.3	\$3.8	↑ 8	7	↑ 5	4
5	Kellogg	Crunchy Nut	↑ \$6.3	\$0.0	↑ 6	0	↑ 5	0
6	General Mills	Cheerios (regular)	↑ \$6.1	\$1.5	↑ 10	4	↑ 7	3
7	General Mills	Fiber One	↑ \$5.6	\$0.0	↑ 8	0	↑ 6	0
8	Kellogg	Froot Loops	↑ \$4.2	\$0.0	↑ 5	0	↑ 3	0
9	Kellogg	Special K	↑ \$4.0	\$0.0	↑ 4	0	↑ 3	0
10	Kellogg	Mini-Wheats	↑ \$2.7	\$0.0	↑ 3	0	↑ 2	0
11	Kellogg	Corn Flakes	↑ \$3.5	\$0.0	↑ 0	0	↑ 0	0

Most
↓
Least

Rank	Company	Advertising spending (\$ million)		Average # of TV ads viewed			
				Hispanic preschoolers (2-5 years)		Hispanic children (6-11 years)	
		2011	2008	2011	2008	2011	2008
1	General Mills	↑ \$32.4	\$14.6	↑ 44	22	↑ 33	14
2	Kellogg	↑ \$23.4	\$5.1	↑ 25	9	↑ 18	5
3	Post	↑ \$9.3	\$5.7	↑ 20	10	↑ 14	6

Source: Nielsen

Methods

We utilized a variety of data sources and methods to provide a comprehensive analysis of the ready-to-eat cereal market in the United States. Through publicly available data, we thoroughly document and evaluate common marketing practices used to promote the majority of widely-available cereal products, including TV advertising, company websites, internet advertising on third-party websites, and social media.

Methods include analyzing the nutrition quality of cereal products and purchasing media exposure and spending data from syndicated sources (i.e., Nielsen and comScore). We augment these analyses with information searches on company websites, monitoring the business and consumer press, and numerous visits to the supermarket. These methods are described in detail in the following sections.

We did not have access to food industry proprietary documents, including privately-commissioned market research, media or marketing plans, or other strategic documents; therefore, we do not attempt to interpret the cereal companies' goals or objectives for their marketing practices. Rather, we provide comprehensive and transparent documentation of a) the nutrition quality of cereal products; b) the extent of children's and adolescents' exposure to cereal marketing, in numerous forms; and c) changes in nutrition and marketing that occurred from 2008 to 2012. We also evaluate the products and marketing practices targeted to young people as compared to those targeted to adults and compare the products and marketing practices of different cereal companies and brands.

Scope of the analysis

To obtain a full list of ready-to-eat (RTE) cereal products to include in our analysis, we first compiled a list of all products stocked in the cereal and natural food aisles of a large, local supermarket, as well as products listed on websites for the large cereal companies and a list of cereals obtained from Nielsen (Industry Classification Code = F122). We then excluded any hot cereals (e.g., oatmeal or Cream of Wheat), any products targeted to small specialized segments of the population (e.g., baby cereals or diabetic products), and any cereal branded products that are not traditional RTE cereals (e.g., Kellogg cereal straws or any type of cereal bar). We also excluded generic cereals, such as store brands, and foreign cereals, such as Dorset and Nestle, from the analysis.

The data reflect cereal product formulations as of May 1, 2012 and the marketing practices used to promote cereals from January 1, 2008 through May 1, 2012. Specific time frames examined for each type of data are described in the following sections. Cereal products and marketing practices continue to evolve; therefore, the information presented in this report does not include new products or

product reformulations, website redesigns, new advertising campaigns, or other marketing programs introduced after May 1, 2012.

To simplify data analysis, we utilized several criteria to categorize cereals. We first assigned a company and brand designation to each cereal:

- **Company** refers to the company that is listed on the package (e.g., General Mills or Kellogg). In most cases, the company listed on the package is the same as the cereal brand's parent company, with a few exceptions. In 2008, Ralcorp acquired Post Cereals from Kraft Foods; these cereals are listed under the Post company. In addition, Quaker cereals is a division of PepsiCo, Kellogg Company owns Kashi, and General Mills owns Cascadian Farm. Packaging for these cereals includes few or no mentions of the parent company; therefore, we categorize them as separate companies.
- **Brand** references the marketing unit for each cereal. For most cereals, the brand is clear from the name of the cereal (e.g., Berry Berry Kix, Honey Kix, and Kix are all different versions of the Kix brand). In some cases, however, marketing practices differed significantly between products with the same brand name. In those instances, marketing practices determine the brand designation. For example, Honey Nut Cheerios markets extensively to children directly, but other types of Cheerios are marketed exclusively to adults. Therefore, we designate Honey Nut Cheerios as a separate brand. Due to the high volume of marketing for regular Cheerios, we also list regular Cheerios and Cheerios (except regular and Honey Nut) as separate brands. In other instances, the names of the cereals differ somewhat, but they are marketed under the same campaign (e.g., Rice Krispies and Cocoa Krispies). In those cases, we assigned the cereals to one brand (i.e., Rice and Cocoa Krispies).
- **Cereal** identifies the specific variety of the cereal. In cases where one variety of the cereal has the same name as the brand (e.g., the Lucky Charms brand includes both Lucky Charms and Lucky Charms Chocolate), we identify the cereal as Lucky Charms (regular) and the brand as Lucky Charms.

We also categorized the brands as either child, family or adult brands according to the marketing practices we documented:

- **Child** brands include any brands for which we found marketing that spoke directly to children. To determine this classification, we first examined the brand's TV advertising. If children were exposed to significantly more advertisements for the brand than were adults and/or the advertising message appealed specifically to children, the brand was designated as a child-targeted brand. If the brand did not advertise on TV during our analysis period, we examined the product website to determine whether

it was designed only for children to access on their own (i.e., not together with their parents). Finally, any products that included a popular children's licensed character or celebrity in the name of the cereal are designated as child-targeted (e.g., Clifford Crunch).

- **Family** brands include any brands for which we found any marketing mention that indicated the brand was appropriate to serve to children, excluding those identified as child brands. Wording on the company website or child features on the packaging (e.g., games and puzzles or cartoon characters) provided evidence that child consumption was suggested. We also designate products as family brands if we did not find evidence of child-targeted marketing after January 1, 2011, even if they had been advertised directly to children in the past (e.g., Count Chocula or Cap'n Crunch cereals).
- **Adult** brands include all other brands. These products contained no mention in any of their marketing materials to indicate that children should or would want to consume these cereals.

The purpose of this report is to document the products and marketing practices used to promote cereals for child and adolescent consumption since 2008. Therefore, although we collected data for all child, family, and adult cereals, the analyses focus on nutrition and marketing practices of child and family brands.

Nutrition quality

The nutrition and ingredient information from each cereal's nutrition facts label provided the data to evaluate the nutrition quality of cereals on our list. We obtained nutrition facts data from company websites, product packaging, and phone calls to cereal company customer service lines. All nutrient information reflects product formulations as of May 1, 2012. Our decision to conduct the analysis using more recent nutrition data provides the most up-to-date evaluation of cereal nutrition quality. These data do not, however, reflect cereal reformulations that occurred after May 1, 2012.

We used a number of methods to evaluate cereal nutrition quality. Our primary evaluation tool, the Nutrition Profiling Index (NPI) score, is based on the nutrition rating system established by Rayner and colleagues for the Food Standards Agency in the United Kingdom.¹ In addition, we examined the sugar, fiber, saturated fat, and sodium content separately to highlight differences between individual nutrients within the NPI score; identified whether the products contain artificial sweeteners; and evaluated the cereals according to other established criteria for nutrition quality. Finally, we evaluated cereal companies' commitment to improving product nutrition by examining changes in the nutrition quality of individual cereals that occurred after 2006, as well as the nutrition quality of new brands and new varieties of existing brands introduced

after June 1, 2009. The following describes each of these methods and criteria in more detail.

NPI score

The NPI score is adapted from the Nutrient Profiling model (NP) currently used by the U.K. Office of Communications (OFCOM) to identify nutritious foods that are appropriate to advertise to children on TV.² The model has also been approved by Food Standards Australia New Zealand to identify products that are permitted to utilize health claims in their marketing.³ The NP model provides one overall nutrition score for a product based on total calories and proportion of both healthy and unhealthy nutrients and specific food groups or items, including saturated fat, sugar, fiber, protein, sodium, and unprocessed fruit, nut, and vegetable content.

The NP model has several advantages over other nutrient profiling systems. The model was developed by nutrition researchers at the University of Oxford independent of food industry funding, its development and scoring method are publicly documented and transparent, and it has been validated to reflect the judgment of professional nutritionists.⁴ It also produces a continuous score that provides a relative evaluation of products, in contrast to threshold models that simply classify foods as "good" or "bad." In addition, the model includes only nutrients that are reasonable and well-justified based on existing nutrition science. In particular, the model does not award points for micronutrient fortification thereby discouraging companies from adding vitamins and minerals to inherently unhealthy products. Appendix B provides a detailed description of the model design, scoring method, and benefits.

The interpretation of the original scores produced by the NP model are not intuitively obvious because the original model is reverse scored (i.e., a higher score indicates a product of worse nutritional quality) and range from +34 to -15. In addition, a score of 3 points or lower identifies healthy foods that are allowed to be advertised to children in the United Kingdom. For the purpose of these analyses, we created an NPI score using the following formula: $NPI\ score = (-2) * NP\ score + 70$. This recalculation produces a score from 0 (poorest nutritional quality) to 100 (highest nutritional quality) that is easier to interpret and compare.

Additional nutrient quality measures

To provide more detailed information about specific healthy and unhealthy nutrients in each cereal, we also calculated the proportion of cereal content from sugar, fiber, and fat (i.e., g of the nutrient divided by g per serving) and milligrams of sodium per 100 grams of cereal. These standardized measures allow comparisons between products of differing serving sizes. In addition to these nutrients, we examined product ingredient lists on the nutrition facts labels to

determine whether the cereals contain artificial sweeteners (aspartame, acesulfame potassium, saccharin, or sucralose). Although these ingredients are allowed by the Food and Drug Administration (FDA), some parents may not wish to feed their children food products which contain these ingredients.

In addition, we evaluated the cereals according to other established nutrition criteria, including Women, Infants, and Children (WIC) guidelines, U.K. guidelines for advertising to children, and products approved by companies participating in the Children's Food and Beverage Advertising Initiative (CFBAI).

- **WIC guidelines.** The Food and Nutrition Service of the U.S. Department of Agriculture (USDA) offers grants to states to provide supplemental foods to low-income pregnant and breastfeeding women, infants, and children younger than 5 years.⁵ Each state establishes its own list of products that can be included in their WIC food package; however, the USDA has determined that all cereals included in the package “must contain ≤ 21.2 g sucrose and other sugars per 100 g dry cereal (≤ 6 g per dry oz).” This measure indicates whether the cereals in our analysis meet this sugar cut-off and would be eligible to include in states' WIC package.
- **U.K. guidelines for advertising to children.** We also identified cereals included in our analysis that could be advertised to children on TV in the United Kingdom.⁶ OFCOM only allows food products with an NP score of 3 or lower to be advertised on children's TV programs or during programs with a disproportionate number of children younger than 16 years old. This score translates to an NPI score greater than 62 according to our revised model.
- **CFBAI-approved products.** We indicate cereals that CFBAI participants have identified as foods that meet their nutrition standards and can be included in advertising primarily directed to children younger than 12 years old in the United States.⁷ Only products offered by participating companies (i.e., General Mills, Kellogg, and Post) were evaluated under this criterion.
- **Interagency Working Group (IWG) on Food Marketed to Children guidelines.** The Federal Trade Commission (FTC), FDA, the Centers for Disease Control and Prevention (CDC), and the USDA, were commissioned by Congress in 2009 to develop recommendations for the nutritional quality of food marketed to children and adolescents. These recommendations represent consensus among the experts in these federal agencies about appropriate standards. The IWG recommendations specify limiting four nutrients:
 - Saturated fat: 1 gram per reference amount customarily consumed (RACC).
 - Added sugars: Maximum of 13 grams of added sugars per RACC for individual foods or no more than 8 grams

when the serving is 30 grams or less (i.e., 13 g per 50 g of cereal).

- Sodium: No more than 210 milligrams of sodium per RACC for individual foods (or per 50 g for foods with low RACCs).
- Trans fat: Zero grams per RACC for individual foods.

The guidelines also require a specific proportion of whole grain. Due to difficulties in assessing exact whole grain content of cereals, we excluded this criteria in the analysis.

Changes in nutrition quality

Finally, we evaluated cereal companies' commitment to improving the nutrition quality of their products with two measures: reformulations of pre-existing cereals and nutrition quality of new brands and new varieties of existing brands.

- **Cereal reformulations.** This measure quantifies changes in nutrition quality for existing cereals. For this analysis, we included the original 108 General Mills, Kellogg, Post, and Quaker cereals for which nutrition content was analyzed in 2006.⁸ Data from the previous Cereal FACTS report (for 2006 and 2009) and nutrition information collected in 2012 were used to measure changes in nutritional quality over time. Increases in NPI score and percentage of fiber, and decreases in sugar and sodium content, were considered positive changes.
- **New cereal introductions.** We used Datamonitor's Product Launch Analytics database to identify new cereal products introduced in the United States from January 2009 to April 2012.⁹ We also searched for product introductions under each brand name for all the cereals on our master list. We then calculated average NPI scores for new cereal brands and new varieties of existing brands.

Marketing practices

In this analysis, we focused our data collection on TV advertising and internet marketing (including company-owned websites, advertising on third-party websites, and social media).

Traditional media

To measure cereal company advertising practices in traditional measured media we licensed data from Nielsen for advertising spending in all measured media and exposure to TV advertising by age group, race, and ethnicity. These data provide a complete picture of cereal company advertising spending and TV advertising from January 1, 2008 through December 31, 2011. Under certain circumstances, the Nielsen database is updated to reflect the most current figures. As a result, the 2008 advertising spending and TV advertising exposure numbers may differ slightly from those reported in the first Cereal FACTS report.

Advertising spending

Nielsen tracks total media spending in 18 different media including TV, internet, radio, magazines, newspaper, free standing insert coupons, and outdoor advertising. We licensed these data for all products in our list of RTE cereals for the four-year period. These data provide a measure of all **advertising spending**.

TV advertising exposure

To measure exposure to cereal advertising, we licensed gross rating points (GRP) data from Nielsen for the same period and products. GRPs measure the total audience delivered by a product's media schedule. It is expressed as a percentage of the population that is exposed to each commercial over a specified period of time across all types of TV programming. It is the advertising industry's standard measure to assess audience exposure to advertising campaigns; and Nielsen is the most widely used source for these data.¹⁰ GRPs, therefore, provide an objective outside assessment of advertising exposure. In addition, GRPs can be used to measure advertisements delivered to a specific audience, that is specific age and other demographic groups (also known as target rating points or TRPs), and provide a "per capita" measure to examine relative exposure among groups. For example, if a cereal product had 2000 GRPs in 2008 for 2- to 11-year-olds and 1000 GRPs for 18- to 49-year-olds, then we can conclude that children saw twice as many ads for that brand in 2008 as compared to adults.

The GRP measure differs from the measure used to evaluate food industry compliance with their CFBAI pledges. As discussed, the pledges apply only to advertising in children's television programming as defined by audience composition (i.e., programs in which 25 to 35% of the audience are younger than 12); approximately one-half of all advertisements viewed by children younger than 12 occur during children's programming.¹⁵ In contrast, GRPs measure children's total exposure to advertising during all types of TV programming. Therefore, evaluating GRPs will determine whether participating companies reduced TV advertising to this age group, or simply shift advertising from children's TV to other types of programming viewed by large numbers of children.

In the TV advertising analyses, we first identified GRPs for the following demographic groups: 2-5 years, 6-11 years, 12-17 years, and 18-49 years. These data combine exposure to national (i.e., network, cable, and syndicated) and local (i.e., spot) TV. In addition, we identified GRPs for black youth (2-11 and 12-17 years) for national TV. Nielsen does not provide spot market GRPs for blacks at the individual level; however, only 2.1% of cereal advertising occurred in spot market TV during the period examined.¹¹ Therefore, these data reflect virtually all black youth exposure to TV cereal advertising. To assess exposure by Hispanic youth, we provide GRP data for advertising that occurred on Spanish-language TV.

Nielsen calculates GRPs as the sum total of all advertising exposures for all individuals within a demographic group, including multiple exposures for individuals (i.e., gross impressions), divided by the size of the population, and multiplied by 100. GRPs are difficult to interpret. Therefore, we also use GRP data to calculate the following TV advertising measures:

Average advertising exposure. This measure is calculated by dividing total GRPs for a demographic group during a specific time period by 100. It provides a measure of ads viewed by individuals in that demographic group, on average, during the time period measured. For example, if Nielsen reports 2000 GRPs for 2- to 11-year-olds for a specific product in 2008, we can conclude that the average 2- to 11-year-old viewed 200 ads for that product in 2008.

Targeted GRP ratios. As GRPs provide a per capita measure of advertising exposure for specific demographic groups, we also used GRPs to measure relative exposure to advertising between demographic groups. We report the following targeted GRP ratios:

- Child to adult targeted ratio = GRPs for 2-11 years/GRPs for 18-49 years.
- Black to white child ratio = GRPs for blacks 2-11 years/GRPs for whites 2-11 years. This measure uses only national GRPs.
- Black to white adolescent ratio = GRPs for blacks 12-17 years/GRPs for whites 12-17 years. This measure uses only national GRPs.

A targeted ratio greater than 1.0 indicates that the average person in the group of interest (i.e., the child in the child to adult ratio) viewed more advertisements than the average person in the comparison group (i.e., the adult), while a targeted ratio less than 1.0 indicates that they viewed fewer ads. For example, a child to adult targeted ratio of 2.0 indicates that children viewed twice as many ads as adults viewed. If this ratio is greater than the relative difference in the amount of TV viewed by each group, we can conclude that the advertiser has designed a media plan to reach this specific demographic group more often than would naturally occur.

Internet marketing

We examined three types of youth-targeted marketing on the internet: cereal company-sponsored websites, banner advertising on other (i.e., third-party) websites, and social media marketing.

Company-sponsored websites

We began with a list of branded websites that were included in the previous Cereal FACTS report and added branded sites that existed between January 2011 and December

2011. For the purposes of this study, a website is defined as all pages containing the same stem URL. For example, CornPops.com is the website of interest, and CornPops.com/_____ are secondary pages contained within the site.

We then eliminated all branded sites without any pages designed for young people to access directly. A website was determined *not* to be youth-oriented if it predominantly had instructions for parents, contained only recipes, had no games or Flash animation, was generally text-oriented, or a combination of the above. For example, CapnCrunch.com, though colorful, was determined not to be a child-targeted website because it contained messages addressed to adults (e.g., "When you were a kid," had product information and games geared toward adults, no Flash animation, and contained stories about parents spending time with their kids). Websites that included child-targeted pages within a primarily adult website were also included in this analysis.

We obtained data on exposure to these websites from the comScore Media Metrix Key Measures Report.¹² comScore maintains the largest existing audience measurement panel and captures the internet behavior of a representative panel of approximately 250,000 to 300,000 monthly users in the United States.¹³ It collects data at both the household and individual level using Session Assignment Technology and biometrics, which can identify computer users without requiring them to log in. As a result, we were able to examine website exposure for both children and adults in the same household. Companies participating with comScore also have beacons (i.e., tag-based data) placed on their web content and advertisements, which allowed us to identify the ads individual users were exposed to, and the specific websites where the exposures occurred. comScore uses these panel data to extrapolate their findings to the total population. Their Media Metrix database provides internet exposure data by month for any websites visited by at least 30 of their panel members in a given month—when available, comScore also provides an estimate of total unique visitors in the United States, visits per month, minutes spent on the website per visit, and pages viewed. In addition, Media Metrix provides exposure information by visitor age, race, and ethnicity for sites that meet the 30 panelist minimum by demographic group.

We first searched the comScore Media Metrix database to identify the youth-targeted cereal websites for which exposure data were available from January through December 2011.

For each quarter during this period, we collected the following data for available cereal websites: total unique visitors, total visits, average minutes per visit, and average visits per unique visitor. In addition, when the website traffic was high enough in a given quarter, we also collected these measures separately for children ages 2-11 years, 12-17 years, 2-17 years, Hispanic youth 6-17 years, and black youth 6-17 years. We also collected data for adults 18-49 years and total unique visitors to the internet overall for each age and demographic group as comparison groups.

For each website in our analysis, we report the following website exposure measures:

- **Average unique visitors per month** for 2- to 11-year-olds, 12- to 17-year-olds, Hispanic 6- to 17-year-olds, and black 6- to 17-year-olds. This measure was calculated by adding total unique visitors reported each quarter from January through December 2011 for each demographic group divided by four (for four quarters).
 - **Average visits per month¹⁴ and average minutes per visit** for each unique visitor. Quarterly numbers, as reported by comScore, were averaged for each website. comScore only reports these data for the larger demographic groups. If separate data were not available for the specific demographic group in a given quarter, we used the information for the next largest demographic group. For example, if data were not available for 2- to 11-year-olds specifically, we report the data for 2- to 17-year-olds or, in a few cases, visitors 2 years and older.
 - **Targeted visitor ratios** were calculated for children versus adults, teens versus adults, Hispanics versus non-Hispanics, and black versus all youth. To determine these ratios, we first calculated **percent of internet visitors exposed** to the website for each demographic group (2-11 years, 12-17 years, 6-17 years, 18-49 years, Hispanics 6-17 years, non-Hispanics 6-17 years, and black 6-17 years) for each quarter. This number was calculated by dividing the number of unique visitors to the website in a given quarter (for the specific demographic group) by the number of unique visitors to the total internet for the same quarter and demographic group. The percent of unique visitors was then multiplied by the **average number of visits** to the website in that quarter for the demographic group to provide an average number of visits to the website for all internet users in that group. This measure takes into account both the reach of the website to the population of interest and the frequency the specific population visited the website in a given quarter. This per capita measure of exposure was then used to calculate the targeted visitor ratios.
- Child to adult** and **teen to adult visitor ratios** were calculated by summing the quarterly average number of visits for children or teens and dividing this number by the sum of the average number of visits for adults.
- Black to all youth ratio** was calculated by summing the quarterly average number of visits for black 6- to 17-year-olds and dividing this number by the sum of the average number of visits for all youth 6-17 years.

Calculating website GRP equivalents

To compare exposure to advertising on TV with exposure to internet advertising, we calculated GRP equivalents for young people's exposure to company websites. We defined **website GRP equivalents** as the percent of young

people exposed, and multiplied by the number of times they were exposed multiplied by 100. To provide a comparable time period to the TV exposure data, we calculated GRP equivalents for 12 months.

We used the following measures from comScore Media Metrix Key Measures Report:

- Total unique visitors to the website for each quarter (u_c)
- Average visits per visitor for each quarter (v)
- Average minutes per visit to the website for each quarter (m)
- Total unique visitors to the internet for each quarter (u_i)

We first divided the total unique visitors to the website for each quarter by total unique visitors to the internet for the same quarter. We then multiplied this quotient by the average visits per visitor to the website in the same quarter and multiplied the resulting number by 3 first (to account for 3 months in a quarter) and then by 100. This number provides the **reach X visits** for one quarter (RV).

$$RV = u_c * v * 3 * 100 / u_i$$

We then combined all available RV totals to obtain an annual total (TRV).

$$TRV = \text{sum}(RV)$$

We then converted the average minutes per visit to the website to :30-second **TV ad equivalents** (TAE). For example, if the average visit to the website lasted 10 minutes, those 10 minutes spent on the website were equivalent to 20 :30 second TV ads. We then multiplied TRV by TV Ad Equivalents to create the final 12-month Website GRP Equivalent.

$$TAE = m * 2$$

$$\text{Website GRP equivalent} = TRV * TAE$$

Banner advertising on third-party websites

Data for exposure to cereal brand advertising on third-party websites (i.e., websites sponsored by other companies) were extracted from the comScore Ad Metrix Advertiser Report.¹⁵ comScore Ad Metrix monitors the same panel of users as comScore Media Metrix, but additionally tracks any advertisements that are fully loaded onto a user's web browser. Ad Metrix, therefore, measures individual exposure to banner ads presented in rich media (SWF files) and traditional image based ads (JPEG and GIF files). It does not capture text, video, or html-based ads. Ad Metrix also ties the advertisement to the unique user viewing it, the third-party website where the advertisement was viewed, and the company sponsoring the advertisement.

Third-party website data were collected for January through December 2011. During this time period, Ad Metrix did not report demographic information about the individuals who

were exposed to these advertisements; therefore, we cannot differentiate between exposure by any specific age group (including children or adolescents).

comScore's Cereal and Breakfast Product Dictionary was used to determine the advertisements of interest. For each month, comScore reported data for any cereal product in the dictionary with at least 10 raw ad views on the total internet or on a specific publisher site. Measures available from comScore for each month include **display ad impressions** (i.e., the number of advertisements fully downloaded and viewed on publisher websites), **advertising exposed unique visitors** (i.e., the number of different individuals exposed to advertisements on a publisher website), and **average frequency of ad views** by cereal advertiser. This information is available for the total internet and for individual publisher websites.

As we could not separate ads viewed by young people from those viewed by adults, we identified the websites on which the advertising appeared that were disproportionately targeted to youth (i.e., youth websites). We defined a **youth website** as a website that met one of two conditions: 1) it was identified by comScore as an entertainment website for youth 2-17 years during the period examined, or 2) the proportion of visitors 2-17 years to the website exceeded the total percent of 2- to 17-year-old visitors to the internet in the given month.

comScore provides web domains both at the conglomerate level (e.g., Disney Online websites) and at a more granular level (i.e., individual websites and parts of sites). We obtained granular web domain data to create the 2011 list of youth websites; however, the 2008 to 2009 list was created using conglomerate-level data. Conglomerate web domains are less likely to meet our definition for youth websites as they consist of multiple sites targeted to different audiences. As a result, the 2008 to 2009 data reported for ads viewed on youth websites slightly under-represents the true number of ads viewed on these sites.

From the comScore data, we calculated the following measures for each cereal brand for which banner advertising was found:

- **Unique viewers per month**¹⁶ was calculated by adding a brand's advertising exposed unique visitors reported monthly from January through December 2011 and dividing by 12 (for 12 months).
- **Ads viewed per viewer per month** was calculated by taking an average of the average frequency of ad views by viewer for the cereal brand each month from January through December 2011.
- **Proportion of ads viewed on youth websites** was calculated by dividing the brand's display ad impressions that were viewed on youth-targeted websites by its display ad impressions that were viewed on all websites during January through December 2011.

- **Average number of ad views on youth websites per month** was calculated by adding a brand's display ad impressions on youth websites reported monthly from January through December 2011 and dividing by 12 (for 12 months).

Calculating banner advertising GRP equivalents

To calculate **banner advertising GRP equivalents** we used the following measures from comScore Ad Matrix Advertiser Report and Media Metrix Key Measures Report:

- Total number of ad views on youth websites for each month (ad_yw)
- Average number of unique visitors to the internet (avg_u_i)

We first calculated the total number of ad views for each brand that appeared on youth websites each month (MAV) and added them together to create a 12-month total (TAV).

TAV = sum (MAV)

We then divided TAV by the average number of unique visitors to the internet (2-11 years and 12-17 years), for the 12-month time period and multiplied the quotient by 100 for the third-party advertising GRP equivalent.

Third-party advertising GRP equivalent = TAV / avg_u_i

Social media marketing

To track social media activity among cereal brands, Facebook, Twitter, and YouTube presence was measured. When available, social media presence was determined for individual brands. Otherwise, social media was determined at the company level.

Facebook. All cereal brands were entered as search terms on Facebook. Brand Facebook pages were considered to be sponsored by the cereal company if the Facebook page provided a link to the brand's main website or if the brand website provided a link to the Facebook page. Additional cereal brand pages were included if they had more than 20,000 "likes." The number of likes and the main demographic of likes was collected by clicking on the "likes" option on the main page. These numbers were assessed on May 1, 2012. The number of postings for the month of April was determined by first selecting the wall option "Posts by Page" which ensured that only posts initiated by the cereal company were displayed. The number of posts dated between April 1 and April 30 were then manually counted.

Twitter. To assess Twitter presence, cereals were entered as search terms on Google with the added term "Twitter." Cereals

were also added as search terms on Twitter directly when there was no account located through Google. Twitter accounts were considered to be sponsored by the cereal company if the account provided a link to the brand's main website or the brand website provided a link to that Twitter account. Once the Twitter account was verified, the number of followers was noted from the main page as of May 1, 2012. The number of postings between April 1 and April 30 was then manually counted.

YouTube. YouTube presence was identified by a YouTube Channel linked directly from a brand's main website. The number of subscribers and viewings was noted from the main YouTube page.

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The UK Ofcom Nutrient Profiling (NP) Model

Defining 'healthy' and 'unhealthy' foods and drinks for TV advertising to children

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Consumer groups and public health organisations have called for bans on the advertising of 'unhealthy' food to children for several decades. The definition of 'unhealthy' has been a topic of considerable argument. Food companies have resisted having any products described as 'unhealthy' but have gradually developed a number of different schemes which define products they believe are 'healthy' (or at least 'healthier') and appropriate for advertising to children. Health and consumer groups have called for a single scheme - or 'nutrient profiling model' - consistent with international recommendations for preventing chronic disease and with national food-based dietary guidelines. A simple system which could be applied to all products and with a clearly defined cut-off for defining which foods are not suitable for advertising to children would be ideal.

What sort of nutrient profiling model?

There are a number of technical questions which need to be considered:

- Which nutrients should be included?
- Should the profiling criteria differ according to the type of food being profiled, or should all foods be assessed using the same criteria?
- What is the reference amount: for example, should foods be compared per 100g, per 100 kcal or per portion or serving?
- Should the final result be presented as a single figure or as a set of figures relating to different aspects of the nutritional quality of the food?

The answers to these questions depend on the purpose of the nutrient profiling model. If the requirement is simply to define the presence of 'high' or 'low' levels of nutrients, then the methodological questions are fairly easily answered, and indeed nutrient profiling in this sense has been widely accepted for national and international legislation. Codex Alimentarius and various other bodies have defined threshold values for making 'high' and 'low' claims for nutrients in food products, per unit of food, and include specific requirements for presenting information on which a nutrient-related claim is made. A similar approach is used for claims which make comparisons such as a 'higher' or 'lower' level of a nutrient relative to similar foods.

An extension of these principles is to combine several different nutrients into a single score which can be used to show that a product is nutritionally better than another, similar one. For example, a manufacturer or retailer may promote a 'healthy eating' range, or a government or public health body may endorse a labelling scheme to identify 'better for you' products. Several schemes to identify healthier options within classes of foods are already available, such as the US manufacturers' *Smart Choices* programme (<http://www.smartchoicesprogram.com/nutrition.html>) and the Swedish Keyhole labelling scheme (http://www.slv.se/upload/nfa/documents/food_regulations/Keyhole_2005_9.pdf).

In 2007 a review of nutrient profiling models commissioned by the UK Food Standards Agency identified over 40 different schemes (<http://www.food.gov.uk/healthiereating/advertisingtochildren/nutlab/nutprofilereview/nutprofilelitupdatetdec07>). More schemes have been developed since then. They vary considerably in the nutrients they consider (ranging from just a few to over 20) and whether they use different criteria according to the type of food being profiled or whether all foods are assessed using the same criteria. The *Smart Choices* scheme has different criteria for 19 different food categories, the *Keyhole* scheme has 26 food categories, and one scheme – used for the Australian Heart Foundation Tick Program (<http://www.heartfoundation.org.au/sites/tick/Pages/default.aspx>) has different criteria for more than 70 food categories. The schemes also vary in the reference amounts they are based upon, and in the measurement criteria they use to score the different aspects of nutritional quality.

For the purposes of defining foods suitable for advertising to children, the nutrient profiling model needs to be relatively simple to understand and to apply. An ideal model uses easily-available information, it should take into account 'positive' elements (e.g. micronutrients, fruit, vegetables and dietary fibre) and 'negative' elements (e.g. saturated fats, salt/sodium and added sugars) and it should provide a single answer which lies on a single scale that runs from 'healthy' to 'unhealthy'.

The UK model

The UK regulator for broadcast media is the Office of Communications, usually called Ofcom, and in anticipation of new regulations to control advertising to children, it requested advice on how to profile the nutrients in foods in

order to judge their suitability for advertising to children. In response, the UK Food Standards Agency commissioned the British Heart Foundation Health Promotion Research Group at Oxford University to carry out a research programme to develop a nutrient profiling model. The development of the model has been well-documented elsewhere (<http://www.food.gov.uk/foodlabelling/researchandreports/nutrientprofiles>). The model was formally passed to Ofcom at the end of 2005 and has subsequently been incorporated into a regulation (http://www.ofcom.org.uk/consult/condocs/foodads_new/statement). This prohibits advertising of specified food and beverages during children's programmes and programmes for which children under the age of 16 years form a disproportionate part of the audience.

In the development of the model, various prototypes were compared with each other and with a set of foods categorised for their compliance with healthy eating guidelines. This was first done relatively informally by a small 'expert group' consisting of academic nutritionists and representatives from industry, consumer organisations and public health bodies, but then more formally using an on-line survey of professional nutritionists in the UK. The survey asked the nutritionists to assess 40 foods for their 'healthiness'. The 40 foods were randomly drawn from 120 different food products representative of the UK diet. The professionals' ratings were compared with the ratings obtained from the prototype models (<http://www.food.gov.uk/multimedia/pdfs/npreportsept05.pdf>).

The best prototype model showed a close correlation with the professional ratings of $r = 0.80$ (95% CI 0.73-0.86). In this model, a single score based on a set of 'negative' indicators (energy, saturated fat, sugars and sodium) is counter-balanced by a score based on 'positive' indicators (protein, fibre and 'fruit, vegetables and nuts'). The protein score was found to be a good indicator of a range of micronutrients that would otherwise merit inclusion in the model. All measurement criteria were per 100 grams. The final model included various refinements to allow for some anomalous foods: in particular, the protein score was disallowed if the score for 'fruit, vegetables and nuts' was too low.

The model generates a final single score which determines whether the food can be advertised to children. Two threshold levels were set: one threshold for all food products and another for beverages.

Note that the model uses a 100g measure rather than actual serving size. This is justified on the basis that the model is designed to measure the nutritional quality of the food regardless of the way it is eaten. Using a 'per serving' approach would have been possible but to do so introduces several difficulties, not least of which is the fact that serving sizes and consumption patterns are an individual matter and cannot be standardised, especially across different age groups.

Early prototypes of the model gave a score for added sugars (technically non-milk extrinsic sugars), but this was later replaced with a score for total sugar, a move which received substantial support from food manufacturers who said they faced technical difficulties in analysing added sugars and that information on total sugars is a requirement of UK (based on European) food labelling legislation. The contribution of foods high in natural sugars to a balanced diet is addressed through the inclusion of criteria for protein (in which dairy products usually score well) and for fruit and vegetables.

Early prototypes also gave scores for calcium, iron and n-3 poly-unsaturated fatty acids. These were later replaced with a score for protein, primarily to make scoring foods easier (protein levels are required by food labelling legislation but calcium, iron and n-3 polyunsaturated fatty acid levels are not) but also because prototype models which gave a score for protein rather than the other three nutrients gave similar results.

Subsequent to the adoption of the model the British Heart Foundation Health Promotion Research Group have further investigated the validity of the model - and in particular have shown that people in the UK who have less healthy diets consume more of their calories in the form of foods defined as less healthy by the model.

The model was developed for the regulation of food advertising in the UK, and was tested on a range of foods in UK national databases. For use outside the UK the model should be assessed using relevant national food databases, and for international use it should be assessed on a broad range of products from different national cuisines.

Added value and further applications of nutrient profiling

A clear result of using nutrient profiling as a means of assessing eligibility for marketing is that the profiling scheme becomes a driver for product reformulation. Processed foods that fail to meet the criteria permitting their advertising to children might benefit from reformulation, enabling the manufacturer to continue to advertise them. For example, most breakfast cereals promoted on children's television are high in sugar, and some are also high in salt. It is hoped that the controls in marketing may stimulate manufacturers to produce products that are lower in sugar and salt, thereby avoiding the advertising restrictions.

Although developed for restrictions on marketing through broadcast media, the model also has the potential to be used as the basis for developing regulations for non-broadcast advertising and promotion - for example for product placements in films or for internet advertising.

Nutrient profiling models could clearly support a wide range of public health initiatives. They are already used extensively as the basis of food labelling schemes. Note however that the front-of-pack 'traffic light' labelling scheme recommended for use by the UK Food Standards Agency uses a different nutrient profiling scheme than the one that has been developed for restrictions on marketing of foods to children. The three 'traffic light' colours indicate high, medium and low levels, for each of four nutrients: fat, saturated fats, sugars and salt/sodium. Nutrient profiling could also be used to support labelling in catering outlets, where, for example, traffic light signalling could help customers select healthier items from menus in advance of ordering their food.

In order to prevent poor quality foods from being promoted with health claims on the basis of a single 'good' ingredient, nutrient profiling can be used to decide if a food is sufficiently 'healthy' to be allowed to carry a health claim. The government body responsible for health claims regulation in Australia and New Zealand (Food Standards Australia New Zealand) has adapted the UK Ofcom model for assessing whether foods should be allowed to carry health claims. Their site includes a calculator that returns a score from the model (<http://www.foodstandards.gov.au/foodmatters/healthnutritionandrelatedclaims/nutrientprofilingcal3499.cfm>). The European Commission is also in the process of developing a nutrient profiling scheme that would define which foods may carry a permitted nutrition or health claim.

The use of nutrient profiling can be extended to contractual relationships: for example the quality criteria for products supplied for school meal services and institutional catering in the workplace. The health sector, armed service, prisons and elderly care could include nutritional profiling standards, which in turn could be used for contract compliance and for health impact assessments of meal service policies.

Fiscal policies designed to benefit public health may, if they are considered appropriate, also benefit from using nutrient profiling as an assessment tool. One criticism made of the suggestion to impose a tax on foods such as soft drinks and snack foods is the difficulty of administering the tax because of the problem of defining what constitutes a soft drink, a snack food, etc. Nutrient profiling provides a method for categorising foods for taxation or subsidy. A taxation system based on nutrient profiling would also encourage manufacturers to reformulate their recipes and adjust their product portfolio.

The UK Ofcom nutrient profiling model in detail

The model provides a single score for any given food product, based on calculating the number of points for

'negative' nutrients which can be offset by points for 'positive' nutrients. Points are allocated on the basis of the nutritional content in 100g of a food or drink.

There are three steps to working out the overall score for the food or drink.

1. Calculate the total 'A' points

A maximum of ten points can be awarded for each ingredient (energy, saturated fat, sugar and sodium). The total 'A' points are the sum of the points scored for each ingredient.

Total 'A' points = [points for energy] + [points for saturated fat] + [points for sugars] + [points for sodium]

Points	Energy (kJ)	Sat Fat (g)	Total Sugar (g)	Sodium (mg)
0	≤ 335	≤ 1	≤ 4.5	≤ 90
1	>335	>1	>4.5	>90
2	>670	>2	>9	>180
3	>1005	>3	>13.5	>270
4	>1340	>4	>18	>360
5	>1675	>5	>22.5	>450
6	>2010	>6	>27	>540
7	>2345	>7	>31	>630
8	>2680	>8	>36	>720
9	>3015	>9	>40	>810
10	>3350	>10	>45	>900

If a food or drink scores 11 or more 'A' points then it cannot score points for protein unless it also scores 5 points for fruit, vegetables and nuts.

2. Calculate the total 'C' points

A maximum of five points can be awarded for each ingredient. The total 'C' points are the sum of the points for each ingredient (note that you should choose one or other of the dietary fibre columns according to how the fibre content of the food or beverage was calculated).

Total 'C' points = [points for fruit, vegetables and nut content] + [points for fibre (either NSP or AOAC)] + [points for protein]

NB. Guidance on scoring fruit, vegetables and nut content is available from the Food Standards Agency (<http://www.foodstandards.gov.uk/multimedia/pdfs/nutprofpguide.pdf>).

Points	Fruit, Veg & Nuts (%)	NSP Fibre (g)	or AOAC Fibre (g)	Protein (mg)
0	≤ 40	≤ 0.7	≤ 0.9	≤ 1.6
1	>40	>0.7	>0.9	>1.6
2	>60	>1.4	>1.9	>3.2
3	-	>2.1	>2.8	>4.8
4	-	>2.8	>3.7	>6.4
5	>80	>3.5	>4.7	>8.0

3. Calculate the overall score

If a food scores less than 11 'A' points then the overall score is calculated as follows:

Overall score = [total 'A' points] minus [total 'C' points].

If a food scores 11 or more 'A' points but scores 5 points for fruit, vegetables and nuts then the overall score is calculated as follows:

Overall score = [total 'A' points] minus [total 'C' points]

If a food scores 11 or more 'A' points but also scores less than 5 points for fruit, vegetables and nuts then the overall score is calculated without reference to the protein value, as follows:

Overall score = [total 'A' points] minus [fibre points + fruit, vegetables and nuts points only]

The model can be adjusted to take account of changes in public health nutritional policy. Within the model any threshold can be defined according to the judgment of the

policy makers and their scientific advisers. For the purposes of the advertising controls introduced in the United Kingdom:

a **food** is classified as 'less healthy' where it scores **4 points or more**, and

a **drink** is classified as 'less healthy' where it scores **1 point or more**.

Frequently asked questions

There are a number of frequently asked questions about how to use the model to calculate scores for products. One of the most frequently asked questions is: 'What counts as a food and what as a drink?' For the purpose of the model a drink is defined as 'any liquid food, excluding oils, soups, condiments (vinegar, salad cream etc.) and dressings.'

Answers to other questions such as 'Should scores be calculated for products as eaten or as sold?', 'How do you calculate the scores for foods where nutritional information is provided by volume rather than weight?' and worked examples are available in technical advice provided by the Food Standards Agency (<http://www.food.gov.uk/multimedia/pdfs/techguidenutprofiling.pdf>).

The model can be adjusted so that points for foods and drinks fall on a scale from 1 to 100 where 1 is the least healthy and 100 is the most healthy product using a simple formula: NUTRITION PROFILING INDEX SCORE = (-2)*OLD SCORE + 70

The table below gives an indication of how the model categorises foods.

Examples of foods that can and cannot be advertised according to the UK Ofcom nutrient profiling model

Foods that can be advertised (points <4 for foods; <1 for drinks)

Wholemeal and white bread
Muesli and wheat biscuit cereal with no added sugar
Fresh fruit
Most nuts
Takeaway salads with no dressing or croutons
Most brands of baked beans
Some brands of baked oven chips
Some brands of chicken nuggets
Fish fingers
Chicken breast
Unsweetened fruit juice
Skimmed, semi-skimmed and whole milk
Diet cola

Foods that cannot be advertised (score ≥4 for foods; score ≥1 for drinks)

Potato crisps including low fat
Most breakfast cereals
Cheddar cheese, half and full fat
Butter and margarine
Most sausages and burgers
Raisins and sultanas
Cookies
Confectionary
French fries
Peanut butter
Mayonnaise, reduced and full calorie
Most pizzas
Sweetened milkshakes
Cola and other carbonated sweetened drinks

Note that some of these classifications depend on the particular recipe for the product.

Source: Annex II of Rayner M, Scarborough P, Boxer A, Stockley L. Nutrient profiles: Development of final model. London: Food Standards Agency, 2005. (<http://www.food.gov.uk/multimedia/pdfs/nutprofr.pdf>)

Annotated reading list about the UK Ofcom nutrient profile model

The history of the model.

These reports describe the development of the UK Ofcom nutrient profiling model.

1. Rayner M, Scarborough P, Stockley L. Nutrient Profiles: Options for definitions for use in relation to food promotion and children's diets. London: Food Standards Agency, 2004. <http://www.food.gov.uk/multimedia/pdfs/nutrientprofilingfullreport.pdf>
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The model was agreed at a board meeting of the UK Food Standards Agency held on 13th October 2005. See the minutes of this meeting. <http://www.food.gov.uk/aboutus/ourboard/boardmeetings/boardmeetings2005/boardmeeting101305/boardminutes131005>

Ofcom agreed to use the model in February 2007. See Office of communications. Television Advertising of Food and Drink Products to Children Final statement. London: Ofcom, 2007. http://www.ofcom.org.uk/consult/condocs/foodads_new/statement/statement.pdf

In 2007 the UK Food Standards Agency set up an Independent Review Panel to assess 'the effectiveness of the nutrient profiling model at differentiating foods on the basis of their nutrient composition'. As part of that review the BHF Health Promotion Research Group was commissioned to carry out a review of nutrient profiling models. See:

5. Stockley L, Rayner M, Kaur A. Nutrient profiles for use in relation to food promotion and children's diet: Update of 2004 literature review. London: Food Standards Agency, 2008. <http://www.food.gov.uk/healthiereating/advertisingtochildren/nutlab/nutprofilereview/nutprofilelitupdatedec07>

The Independent Review Panel finished its work in March 2009. See the report of their review for a board meeting of the UK Food Standards Agency of 25th March 2009. <http://www.food.gov.uk/multimedia/pdfs/board/fsa090306v2.pdf>

At this meeting the UK Food Standards Agency accepted the finding of the Independent Review Panel 'that the nutrient profiling model was generally scientifically robust and fit for purpose' and considered that there was no need to modify the model for the time being. See the minutes of this meeting. <http://www.food.gov.uk/multimedia/pdfs/board/boardmins090325.pdf>

Papers on the model published in peer-reviewed journals

Meanwhile the BHF Health Promotion Research Group has published a series of papers relating to the development of the model and its validation. These publications include the following:

6. Rayner M, Scarborough P, Williams C. The origin of Guideline Daily Amounts and the Food Standards Agency's guidance on what counts as 'a lot' and 'a little'. *Public Health Nutrition* 2003; 7 (4); 549-556.
7. Scarborough P, Rayner M, Stockley L. Developing nutrient profile models: a systematic approach. *Public Health Nutrition* 2007; 10; 330-336.
8. Scarborough P, Rayner M, Stockley L, Black A. Nutrition professionals' perception of the 'healthiness' of individual foods, *Public Health Nutrition* 2007; 10; 346-353.
9. Scarborough P, Boxer A, Rayner M, Stockley L. Testing nutrient profile models using data from a survey of nutrition professionals, *Public Health Nutrition* 2007; 10; 337-345.
10. Arambepola C, Scarborough M, Rayner M. Validating a nutrient profile model, *Public Health Nutrition* 2008; 11; 371-378.
11. Arambepola C, Scarborough P, Boxer A, Rayner M. Defining 'low in fat' and 'high in fat' when applied to a food. *Public Health Nutrition* 2009; 12; 341-350.

And other papers have discussed the model including:

Azais-Braesco, V, Goffi, C, Labouze, E. Nutrient profiling: comparison and critical analysis of existing systems. *Public Health Nutrition* 2006; 9(5): 613-622.

Lobstein T, Davies S. Defining and labelling 'healthy' and 'unhealthy' food. *Public Health Nutrition* 2009; 12; 331-340.

Table C1. Cereal Nutrition Information

Company	Brand	Variety	Target	Approved by CFBAI criteria*	Meets IWG criteria	NPI scores						Nutrition information in 2012					
						2006	2009	2012	2012 size (g)	Serving size (g)	Calories (kcal)	Fiber (g)	Sugar (g)	Sodium (mg)	Sugar (% of g)	Fiber (% of g)	Sodium (mg per 100 g)
Annie's																	
Annie's	Annie's	Cinnamon Roll Bunny O's	Family	Yes	Yes	50	29	120	1	7	85	24%	3.4%	293			
Annie's	Annie's	Cocoa and Vanilla Bunnies	Family			46	50	110	1	8	85	28%	3.4%	293			
Annie's	Annie's	Fruity Bunnies	Family			46	50	120	1	7	85	24%	3.4%	293			
Annie's	Annie's	Honey Bunnies	Family			54	52	110	1	7	90	24%	3.4%	310			
Annie's	Annie's	Organic Bunny O's	Family			64	29	120	1	2	110	7%	3.4%	379			
Barbara's Bakery																	
Barbara's Bakery		Brown Rice Crisps	Adult	Yes	Yes	70	30	120	1	1	95	3%	3.3%	317			
Barbara's Bakery		Corn Flakes	Adult	Yes	Yes	68	30	110	1	3	80	10%	3.3%	267			
Barbara's Bakery		Hole 'n Oats	Adult	Yes	Yes	78	30	120	3	1	80	3%	10.0%	267			
Barbara's Bakery		Hole 'n Oats	Adult			54	30	120	2	10	80	33%	6.7%	267			
Barbara's Bakery		Puffins	Family			54	56	90	6	6	150	20%	20.0%	500			
Barbara's Bakery		Puffins	Family	Yes	Yes	56	68	120	3	6	80	20%	10.0%	267			
Barbara's Bakery		Puffins	Family	Yes	Yes	68	30	110	3	6	80	20%	10.0%	267			
Barbara's Bakery		Puffins	Family			50	50	27	90	5	190	19%	18.5%	704			
Barbara's Bakery		Peanut Butter	Family			46	46	30	110	2	6	230	20%	6.7%	767		
Barbara's Bakery		Peanut Butter and Chocolate	Family	Yes	Yes	58	30	110	3	6	105	20%	10.0%	350			
Barbara's Bakery		Crunchy Cocoa	Family	Yes	Yes	58	58	30	120	3	7	80	23%	10.0%	267		
Barbara's Bakery		Fruit Medley	Family	Yes	Yes	58	54	30	120	1	7	80	23%	3.3%	267		
Barbara's Bakery		Blueberry Burst	Adult	Yes	Yes	58	55	220	4	14	140	25%	7.3%	255			
Barbara's Bakery		Cinnamon Crunch	Family			50	50	55	230	4	15	220	27%	7.3%	400		
Barbara's Bakery		Original	Adult			56	58	220	5	12	260	21%	8.6%	448			
Barbara's Bakery		Vanilla Almond	Adult			52	52	55	220	4	15	210	27%	7.3%	382		
Barbara's Bakery		Multigrain	Adult			54	54	32	120	4	5	200	16%	12.5%	625		
Barbara's Bakery		Shredded Wheat	Adult	Yes	Yes	82	82	40	140	5	0	0	0%	12.5%	0		
Barbara's Bakery		Ultima Organic	Adult	Yes	Yes	70	55	190	10	11	140	20%	18.2%	255			
Barbara's Bakery		Ultima Organic	Adult	Yes	Yes	58	72	55	200	10	9	140	16%	18.2%	255		
Barbara's Bakery		High Fiber-Original	Adult	Yes	Yes	70	72	55	180	14	8	140	15%	25.5%	255		
Cascadian Farms																	
Cascadian Farms		Chocolate O's	Family			54	28	100	3	8	95	29%	10.7%	339			
Cascadian Farms		Cinnamon Crunch	Family			50	50	27	110	3	8	105	30%	11.1%	389		
Cascadian Farms		Clifford Crunch	Child			54	52	30	110	3	8	160	27%	10.0%	533		
Cascadian Farms		Fruitful O's	Family			50	28	100	3	8	130	29%	10.7%	464			
Cascadian Farms		Granola	Adult			50	50	55	210	3	16	200	29%	5.5%	364		
Cascadian Farms		Granola	Adult			52	52	210	4	14	160	27%	7.7%	308			
Cascadian Farms		Granola	Adult	Yes	Yes	56	50	210	3	13	85	26%	6.0%	170			
Cascadian Farms		Granola	Adult			54	54	52	210	3	14	95	27%	5.8%	183		
Cascadian Farms		Maple Brown Sugar	Adult	Yes	Yes	54	54	55	220	3	14	160	25%	5.5%	291		
Cascadian Farms		Oats & Honey	Adult	Yes	Yes	54	54	55	230	3	13	120	24%	5.5%	218		
Cascadian Farms		Hearty Morning	Adult			48	48	55	200	8	11	360	20%	14.5%	655		

Table C1. Cereal Nutrition Information

Company	Brand	Variety	Target	Approved by CFBAI criteria*	Meets IWG criteria*	Nutrition information in 2012										
						NPI scores			Serving			Sodium				
						2006	2009	2012 size (g)	(kcal)	Fiber (g)	Sugar (g)	(mg)	(% of g)	(% of g)	(mg per 100 g)	
Cascadian Farms	Honey Nut O's	Family	Family			44	50	30	110	3	7	170	23%	10.0%	567	
Cascadian Farms	Multi-Grain Squares	Adult	Adult	Yes		70	70	30	110	2	4	115	13%	6.7%	383	
Cascadian Farms	Purely O's	Family	Family			46	58	30	110	3	1	190	3%	10.0%	633	
Cascadian Farms	Raisin Bran	Adult	Adult			50	50	55	180	6	14	340	25%	10.9%	618	
General Mills																
General Mills	Basic 4	Adult	Adult			50	50	50	200	4	13	280	24%	7.3%	509	
General Mills	Boo Berry	Family	Family			34	40	44	33	130	1	10	190	30%	3.0%	576
General Mills	Cheerios	(Regular)	Family			58	58	70	28	100	3	1	160	4%	10.7%	571
General Mills	Cheerios	Apple Cinnamon	Family			40	44	50	30	120	2	10	115	33%	6.7%	383
General Mills	Cheerios	Banana Nut	Family			42	46	28	100	2	9	160	32%	7.1%	571	
General Mills	Cheerios	Chocolate	Family			46	27	100	2	9	170	33%	7.4%	630		
General Mills	Cheerios	Cinnamon Burst	Family			52	32	110	5	9	125	28%	15.6%	391		
General Mills	Cheerios	Frosted	Family			46	46	28	110	2	9	170	32%	7.1%	607	
General Mills	Cheerios	Fruity	Family			48	48	27	100	2	9	135	33%	7.4%	500	
General Mills	Cheerios	Honey Nut	Child	Yes		44	44	46	28	110	2	9	160	32%	7.1%	571
General Mills	Cheerios	Multigrain	Family		Yes	50	50	56	29	110	3	6	120	21%	10.3%	414
General Mills	Cheerios	Multigrain Peanut Butter	Family			48	28	110	2	9	130	32%	7.1%	464		
General Mills	Cheerios	Oat Cluster Crunch/Crunch	Family			50	50	27	100	2	8	135	30%	7.4%	500	
General Mills	Cheerios	Yogurt Burst Strawberry	Family			36	46	46	30	120	2	9	180	30%	6.7%	600
General Mills	Chex	Chocolate	Family			46	46	27	100	2	9	170	33%	7.4%	630	
General Mills	Chex	Cinnamon	Family			38	46	30	120	1	8	180	27%	3.3%	600	
General Mills	Chex	Corn	Family			44	44	52	31	120	2	3	240	10%	6.5%	774
General Mills	Chex	Honey Nut	Family			32	42	44	32	120	1	9	200	28%	3.1%	625
General Mills	Chex	Multi-Bran	Family			50	50	52	47	160	6	10	270	21%	12.8%	574
General Mills	Chex	Rice	Family			44	42	50	27	100	1	2	240	7%	3.7%	889
General Mills	Chex	Wheat	Family			50	52	56	47	160	6	5	270	11%	12.8%	574
General Mills	Cinnamon Toast Crunch	(Regular)	Child	Yes		36	36	40	31	130	2	10	220	32%	6.5%	710
General Mills	Cinnamon Toast Crunch	Frosted Toast Crunch	Child	Yes		42	30	120	1	9	170	30%	3.3%	567		
General Mills	Cocoa Puffs	(Regular)	Child	Yes		36	38	44	27	100	2	10	150	37%	7.4%	556
General Mills	Cocoa Puffs	Brownie crunch	Child			46	27	110	2	9	130	33%	7.4%	481		
General Mills	Cookie Crisp	(Regular)	Child			36	40	46	26	100	1	9	120	35%	3.8%	462
General Mills	Cookie Crisp	Sprinkles	Child			48	27	100	1	9	120	33%	3.7%	444		
General Mills	Count Chocula	Family	Family			34	38	42	27	100	1	10	160	37%	3.7%	593
General Mills	Curves	Fruit & Nut Crunch	Adult			54	54	49	170	5	10	240	20%	10.2%	490	
General Mills	Curves	Honey Crunch	Adult			54	54	53	190	5	9	290	17%	9.4%	547	
General Mills	Curves	Whole Grain Crunch	Adult			52	52	27	100	2	4	180	15%	7.4%	667	
General Mills	Dora the Explorer	80 Calories Honey Squares	Child			50	52	27	100	3	6	150	22%	11.1%	556	
General Mills	Fiber One	Fiber One	Adult			64	30	80	10	3	140	10%	33.3%	467		
General Mills	Fiber One	Caramel Delight	Adult			34	54	50	180	9	10	230	20%	18.0%	460	
General Mills	Fiber One	Frosted Shredded Wheat	Adult	Yes		74	74	60	200	9	12	0	20%	15.0%	0	
General Mills	Fiber One	Honey Clusters	Adult			70	70	68	52	160	13	6	230	12%	25.0%	442

Table C1. Cereal Nutrition Information

Company	Brand	Variety	Target	Approved by CFBAI criteria*	Meets IWG criteria	NPI scores						Nutrition information in 2012					
						2006	2009	2012 size (g)	Serving size (g)	Calories (kcal)	Fiber (g)	Sugar (g)	Sodium (mg)	Sugar (% of g)	Fiber (% of g)	Sodium (mg per 100 g)	
General Mills	Fiber One	Original (Bran)	Adult	Yes	Yes	78	78	78	30	60	14	0	105	0%	46.7%	350	
General Mills	Fiber One	Raisin Bran Clusters	Adult	Yes	Yes	54	54	56	55	170	11	14	210	25%	20.0%	382	
General Mills	Franken Berry		Family			26	54	44	33	130	1	10	190	30%	3.0%	576	
General Mills	Golden Grahams		Family			32	36	42	31	120	2	10	240	32%	6.5%	774	
General Mills	Honey Nut Clusters		Adult			46	54	56	30	110	3	3	180	10%	10.0%	600	
General Mills	Kix	(Regular)	Family			44	48	54	33	120	2	7	170	21%	6.1%	515	
General Mills	Kix	Berry Berry	Family			50	52	33	33	120	3	6	190	18%	9.1%	576	
General Mills	Lucky Charms	(Regular)	Child	Yes		34	36	42	27	110	2	10	170	37%	7.4%	630	
General Mills	Lucky Charms	Chocolate	Child			36	36	42	28	110	1	10	160	36%	3.6%	571	
General Mills	Oatmeal Crisp	Crunchy Almond	Adult			48	58	58	60	230	5	16	125	27%	8.3%	208	
General Mills	Oatmeal Crisp	Hearty Raisin	Adult			50	56	56	62	230	5	19	120	31%	8.1%	194	
General Mills	Raisin Nut Bran		Adult			50	48	48	49	180	5	14	230	29%	10.2%	469	
General Mills	Reese's Puffs		Child	Yes		34	34	38	29	120	1	10	160	34%	3.4%	552	
General Mills	Total	Honey Almond Flax	Adult	Yes		52	52	52	53	200	4	14	90	26%	7.5%	170	
General Mills	Total	Raisin Bran	Adult			52	52	52	53	160	5	17	230	32%	9.4%	434	
General Mills	Total	Whole Grain	Adult			52	52	52	30	100	3	5	190	17%	10.0%	633	
General Mills	Trix		Child	Yes		34	38	42	32	120	1	10	180	31%	3.1%	563	
General Mills	Wheaties	Fuel	Adult	Yes		58	55	190	8	14	140	140	25%	14.5%	255		
General Mills	Wheaties		Adult			52	52	52	27	100	3	4	190	15%	11.1%	704	
Kashi																	
Kashi	Kashi (Shredded Wheat Type)	Autumn Wheat	Adult	Yes	Yes	78	70	55	210	7	11	125	20%	12.7%	227		
Kashi	Kashi (Shredded Wheat Type)	Cinnamon Harvest	Adult	Yes	Yes	74	76	55	180	5	9	0	16%	9.1%	0		
Kashi	Kashi (Shredded Wheat Type)	Island Vanilla	Adult	Yes	Yes	50	76	55	190	6	9	5	16%	10.9%	9		
Kashi	Kashi Flakes	7 Whole Grains Flakes	Adult	Yes	Yes	72	74	50	180	6	4	150	8%	12.0%	300		
Kashi	Kashi Golden Goodness		Family			72	60	210	6	8	170	13%	10.0%	283			
Kashi	Kashi GoLean	Original	Adult	Yes	Yes	78	52	140	10	6	85	12%	19.2%	163			
Kashi	Kashi GoLean Crisp!	Cinnamon Crumble	Adult	Yes	Yes	70	51	190	9	10	130	20%	17.6%	255			
Kashi	Kashi GoLean Crisp!	Toasted Berry Crumble	Adult	Yes	Yes	70	51	180	8	10	125	20%	15.7%	245			
Kashi	Kashi GoLean Crunch!	Honey Almond Flax	Adult	Yes	Yes	58	58	53	200	8	12	140	23%	15.1%	264		
Kashi	Kashi GoLean Crunch!	Original	Adult	Yes	Yes	70	58	53	190	8	13	100	25%	15.1%	189		
Kashi	Kashi Good Friends		Adult	Yes	Yes	72	72	53	160	12	10	110	19%	22.6%	208		
Kashi	Kashi Granola	Cocoa Beach	Adult			54	56	55	220	7	10	130	18%	12.7%	236		
Kashi	Kashi Granola	Mt Medley Granola	Adult	Yes	Yes	58	56	55	230	6	10	135	18%	10.9%	245		
Kashi	Kashi Heart to Heart	Honey Toasted Oat	Adult	Yes	Yes	70	72	33	120	5	5	85	15%	15.2%	258		
Kashi	Kashi Heart to Heart	Oat Flakes & Wild Blueberry Clusters	Adult	Yes	Yes	58	70	55	200	4	12	135	22%	7.3%	245		
Kashi	Kashi Heart to Heart	Warm Cinnamon Oat	Adult	Yes	Yes	72	33	120	5	5	80	15%	15.2%	242			
Kashi	Kashi Honey Puffs	7 Whole Grains Honey Puffs	Adult	Yes	Yes	82	74	30	120	2	6	0	20%	6.7%	0		
Kashi	Kashi Nuggets	7 Whole Grains Nuggets	Adult			72	72	58	210	7	3	260	5%	12.1%	448		
Kashi	Kashi Organic Cereal	Indigo Morning	Adult			54	27	100	2	6	125	22%	7.4%	463			

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Company	Brand	Variety	Target	Approved by CFBAI criteria*	Meets IWG criteria	NPI scores					Nutrition information in 2012						
						2006	2009	2012	2009	2012	Serving size (g)	Calories (kcal)	Fiber (g)	Sugar (g)	Sodium (mg)	Sugar (% of g)	Fiber (% of g)
Kashi	Kashi Organic Cereal	Simply Maize	Adult	Yes	Yes	56	27	100	2	6	110	22%	7.4%	407			
Kashi	Kashi Puffs	7 Whole Grains Puffs	Adult	Yes	Yes	82	19	70	1	0	0	0%	5.3%	0			
Kashi	Kashi Squares	Berry Blossoms	Family	Yes	Yes	54	30	100	6	7	125	23%	20.0%	417			
Kashi	Kashi Squares	Kashi Honey Sunshine	Family	Yes	Yes	56	30	100	5	6	135	20%	16.7%	450			
Kashi	Kashi Strawberry Fields	Kashi	Adult	Yes	Yes	44	46	32	120	1	9	170	28%	3.1%	531		
Kashi	Kashi U	Black Currants and Walnuts	Adult	Yes	Yes	70	55	210	7	11	125	20%	12.7%	227			
Kellogg			Adult														
Kellogg	All-Bran	Bran Buds	Adult	Yes	Yes	52	52	50	30	8	210	27%	43.3%	700			
Kellogg	All-Bran	Complete Wheat Flakes	Adult	Yes	Yes	52	52	29	90	5	210	17%	17.2%	724			
Kellogg	All-Bran	Original	Adult	Yes	Yes	72	72	72	31	80	10	6	80	19%	32.3%	258	
Kellogg	Apple Jacks	(Regular)	Child	Yes	Yes	38	40	44	28	100	3	12	130	43%	10.7%	464	
Kellogg	Bear Naked Cereal	Nut Cluster Crunch- Honey Almond	Adult	Yes	Yes	56	49	180	3	11	220	22%	6.1%	449			
Kellogg	Bear Naked Cereal	Nut Cluster Crunch- Maple Nut	Adult	Yes	Yes	56	59	220	4	13	260	22%	6.8%	441			
Kellogg	Cinnabon	(Regular)	Adult	Yes	Yes	44	30	120	1	12	115	40%	3.3%	383			
Kellogg	Cocoa Krispies	(Regular)	Child	Yes	Yes	34	40	42	31	120	1	12	130	39%	3.2%	419	
Kellogg	Corn Flakes	(Regular)	Adult	Yes	Yes	52	52	50	28	100	1	3	200	11%	3.6%	714	
Kellogg	Corn Pops (or Pops)	(Regular)	Child	Yes	Yes	40	36	50	32	120	3	10	125	31%	9.4%	391	
Kellogg	Cracklin Oat Bran	(Regular)	Adult	Yes	Yes	40	40	40	49	200	6	15	150	31%	12.2%	306	
Kellogg	Crispix	(Regular)	Adult	Yes	Yes	48	48	46	29	110	1	4	220	14%	3.4%	759	
Kellogg	Crunchy Nut	Caramel Nut	Adult	Yes	Yes	38	31	120	0	10	150	32%	0.0%	484			
Kellogg	Crunchy Nut	Golden Honey Nut	Adult	Yes	Yes	46	31	120	1	10	135	32%	3.2%	435			
Kellogg	Crunchy Nut	Roasted Nut and Honey	Adult	Yes	Yes	50	27	100	2	10	95	37%	7.4%	352			
Kellogg	Eggo Cereal	Maple Syrup	Adult	Yes	Yes	44	46	31	120	2	12	150	39%	6.5%	484		
Kellogg	Fiber Plus Antioxidants	Berry Yogurt Crunch	Adult	Yes	Yes	54	53	170	10	12	200	23%	18.9%	377			
Kellogg	Fiber Plus Antioxidants	Caramel Pecan Clusters	Adult	Yes	Yes	54	49	170	9	12	200	24%	18.4%	408			
Kellogg	Fiber Plus Antioxidants	Cinnamon Oat Crunch	Adult	Yes	Yes	56	32	110	9	7	140	22%	28.1%	438			
Kellogg	Froot Loops	(Regular)	Child	Yes	Yes	36	38	42	29	110	3	12	135	41%	10.3%	466	
Kellogg	Froot Loops	Marshmallows	Child	Yes	Yes	36	38	44	29	110	2	14	110	48%	6.9%	379	
Kellogg	Frosted Flakes	(Regular)	Child	Yes	Yes	42	42	42	30	110	1	11	140	37%	3.3%	467	
Kellogg	Frosted Flakes	Reduced Sugar	Child	Yes	Yes	46	46	46	52	30	110	3	8	160	27%	10.0%	533
Kellogg	Honey Smacks	(Regular)	Family	Yes	Yes	44	46	48	27	100	1	15	40	56%	3.7%	148	
Kellogg	Low Fat Granola	with Raisins	Adult	Yes	Yes	54	54	56	60	230	4	17	150	28%	6.7%	250	
Kellogg	Low Fat Granola	without Raisins	Adult	Yes	Yes	54	54	54	49	190	3	14	125	29%	6.1%	255	
Kellogg	Mini-Wheats	Frosted/ Big Bite	Family	Yes	Yes	74	74	74	58	200	6	12	0	21%	10.3%	0	
Kellogg	Mini-Wheats	Frosted/ Bite Size	Family	Yes	Yes	74	74	74	54	190	6	11	0	20%	11.1%	0	
Kellogg	Mini-Wheats	Frosted/ Blueberry Muffin	Family	Yes	Yes	70	74	55	190	6	12	0	22%	10.9%	0		
Kellogg	Mini-Wheats	Frosted/ Cinnamon Streusel	Family	Yes	Yes	70	74	54	190	6	12	0	22%	11.1%	0		
Kellogg	Mini-Wheats	Frosted/ Maple & Brown Sugar	Family	Yes	Yes	70	74	55	190	6	12	0	22%	10.9%	0		
Kellogg	Mini-Wheats	Frosted/ Strawberry Delight	Family	Yes	Yes	70	74	55	190	6	12	0	22%	10.9%	0		
Kellogg	Mini-Wheats	Frosted/Mixed Berry Touch of Fruit in the Middle	Family	Yes	Yes	74	55	190	6	10	10	18%	10.9%	18			

Table C1. Cereal Nutrition Information

Company	Brand	Variety	Target	Approved by CFBAI criteria*	Meets IWG criteria*	NPI scores						Nutrition information in 2012					
						2006	2009	2012 size (g)	Serving size (g)	Calories (kcal)	Fiber (g)	Sugar (g)	Sodium (mg)	Sugar (% of g)	Fiber (% of g)	Sodium (mg per 100 g)	
Kellogg	Mini-Wheats	Unfrosted/ Bite Size	Family	Yes	Yes	82	82	82	55	190	8	0	0	0	14.5%	0	
Kellogg	Mini-Wheats	Little Bites- Chocolate	Family	Yes	Yes	56	54	55	55	190	6	12	210	22%	10.9%	382	
Kellogg	Mini-Wheats	Little Bites- Cinnamon Roll	Family	Yes	Yes	74	74	74	55	190	6	12	0	22%	10.9%	0	
Kellogg	Mini-Wheats	Little Bites- Frosted/Original	Family	Yes	Yes	74	74	74	55	190	6	11	0	20%	10.9%	0	
Kellogg	Mueslix		Adult	Yes	Yes	54	54	58	55	200	5	14	140	25%	9.1%	255	
Kellogg	Product 19		Adult	Yes	Yes	50	50	48	30	110	1	4	220	13%	3.3%	733	
Kellogg	Raisin Bran	(Regular)	Adult	Yes	Yes	46	46	54	59	190	7	18	210	31%	11.9%	356	
Kellogg	Raisin Bran	Crunch	Adult	Yes	Yes	48	48	50	53	190	4	19	200	36%	7.5%	377	
Kellogg	Rice Krispies	(Regular)	Child	Yes	Yes	38	44	52	33	130	1	4	190	12%	3.0%	576	
Kellogg	Rice Krispies	Frosted Krispies	Child	Yes	Yes	32	32	38	30	110	0	12	110	40%	0.0%	367	
Kellogg	Rice Krispies	Gluten Free	Child	Yes	Yes	64	64	64	30	110	1	1	180	3%	3.3%	600	
Kellogg	Rice Krispies	Rice Krispies Treats	Child	Yes	Yes	38	38	30	30	120	0	9	170	30%	0.0%	567	
Kellogg	Smart Start	Original Antioxidants	Adult	Yes	Yes	48	48	48	50	180	3	14	280	28%	6.0%	560	
Kellogg	Smart Start	Toasted Oat	Adult	Yes	Yes	56	56	56	60	220	5	17	140	28%	8.3%	233	
Kellogg	Smorz		Family	Yes	Yes	38	38	40	30	120	1	13	135	43%	3.3%	450	
Kellogg	Special K	(Regular)	Adult	Yes	Yes	50	50	44	31	120	0	4	220	13%	0.0%	710	
Kellogg	Special K	Blueberry	Adult	Yes	Yes	48	48	52	30	110	3	8	140	27%	10.0%	467	
Kellogg	Special K	Chocolatey Delight	Adult	Yes	Yes	32	32	36	31	120	3	9	180	29%	9.7%	581	
Kellogg	Special K	Cinnamon Pecan	Adult	Yes	Yes	46	46	48	30	110	3	7	190	23%	10.0%	633	
Kellogg	Special K	Fruit & Yogurt	Adult	Yes	Yes	44	44	50	32	120	3	10	140	31%	9.4%	438	
Kellogg	Special K	Low-fat Granola	Adult	Yes	Yes	76	76	76	52	190	5	3	115	6%	9.6%	221	
Kellogg	Special K	Multigrain Oats and Honey	Adult	Yes	Yes	50	50	29	100	3	8	140	28%	10.3%	483		
Kellogg	Special K	Protein Plus	Adult	Yes	Yes	72	70	70	29	100	5	2	110	7%	17.2%	379	
Kellogg	Special K	Red Berries	Adult	Yes	Yes	40	40	48	31	110	3	9	190	29%	9.7%	613	
Kellogg	Special K	Vanilla Almond	Adult	Yes	Yes	46	46	48	30	110	3	9	170	30%	10.0%	567	
Nature's Path																	
Nature's Path	Crispy Rice Cereal		Adult	Yes	Yes	68	68	68	30	110	2	2	160	7%	6.7%	533	
Nature's Path	Envirokidz Organic	Amazon Frosted Flakes	Family	Yes	Yes	56	54	54	30	120	2	7	120	23%	6.7%	400	
Nature's Path	Envirokidz Organic	Gorilla Munch	Family	Yes	Yes	54	54	54	30	115	2	9	100	30%	6.7%	333	
Nature's Path	Envirokidz Organic	Koala Crisp	Family	Yes	Yes	44	44	48	30	120	1	9	135	30%	3.3%	450	
Nature's Path	Envirokidz Organic	Leapin Lemurs	Family	Yes	Yes	54	54	54	30	120	2	8	115	27%	6.7%	383	
Nature's Path	Envirokidz Organic	Peanut Butter Panda Puffs	Family	Yes	Yes	50	44	44	30	130	1	12	95	40%	3.3%	317	
Nature's Path	Flax Plus	Maple Pecan Crunch	Adult	Yes	Yes	56	55	55	220	5	10	190	18%	9.1%	345		
Nature's Path	Flax Plus	Multigrain Flakes	Adult	Yes	Yes	58	52	52	30	100	7	5	190	17%	23.3%	633	
Nature's Path	Flax Plus	Pumpkin Raisin Crunch	Adult	Yes	Yes	56	55	55	210	7	13	150	24%	12.7%	273		
Nature's Path	Flax Plus	Raisin Bran Flakes	Adult	Yes	Yes	58	55	55	190	8	12	190	22%	14.5%	345		
Nature's Path	Flax Plus	Red Berry Crunch	Adult	Yes	Yes	58	58	55	210	5	10	160	18%	9.1%	291		
Nature's Path	Fruit Juice Sweetened Corn Flakes		Adult	Yes	Yes	58	58	58	30	120	0	3	125	10%	0.0%	417	
Nature's Path	Heritage Crunch		Adult	Yes	Yes	58	55	55	230	6	6	210	11%	10.9%	382		
Nature's Path	Sunrise	Crunchy Maple	Adult	Yes	Yes	54	54	54	30	110	3	7	130	23%	10.0%	433	
Nature's Path	Sunrise	Crunchy Vanilla	Adult	Yes	Yes	54	54	54	30	110	3	7	130	23%	10.0%	433	

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						2006	2009	2012	2012 size (g)	Serving size (g)	Calories (kcal)	Fiber (g)	Sugar (g)	Sodium (mg)	Sugar (% of g)	Fiber (% of g)
Newman's Own	Newman's Own	Cinnamon Fiber Flakes	Adult	Yes	Yes	74	30	90	8	6	0	20%	26.7%	0		
Newman's Own	Newman's Own	Flake n Strawberry	Adult			54	54	30	110	2	8	130	27%	6.7%	433	
Newman's Own	Newman's Own	Honey Flax Flakes	Adult			58	56	30	100	4	8	80	27%	13.3%	267	
Newman's Own	Newman's Own	Vanilla Almond	Adult	Yes	Yes	54	30	110	2	7	125	23%	6.7%	417		
Peace Cereal																
Peace Cereal	Peace Cereal	Apple Cinnamon	Adult			52	55	220	3	12	300	22%	5.5%	545		
Peace Cereal	Peace Cereal	Blueberry Pomegranate	Adult	Yes	Yes	70	55	240	3	14	20	25%	5.5%	36		
Peace Cereal	Peace Cereal	Cherry Almond	Adult	Yes	Yes	58	55	240	3	13	75	24%	5.5%	136		
Peace Cereal	Peace Cereal	French Vanilla Granola	Adult			56	56	240	3	15	70	27%	5.5%	127		
Peace Cereal	Peace Cereal	Goji Berry	Adult	Yes	Yes	70	55	210	5	7	190	13%	9.1%	345		
Peace Cereal	Peace Cereal	Golden Honey Granola	Adult	Yes	Yes	76	58	240	4	10	120	18%	7.3%	218		
Peace Cereal	Peace Cereal	Hearty Raisin Bran	Adult	Yes	Yes	70	55	190	8	9	170	16%	14.5%	309		
Peace Cereal	Peace Cereal	Mango Passion	Adult			46	46	55	230	2	10	330	18%	3.6%	600	
Peace Cereal	Peace Cereal	Maple Pecan	Adult	Yes	Yes	54	54	240	3	11	220	20%	5.5%	400		
Peace Cereal	Peace Cereal	Raspberry Ginger	Adult	Yes	Yes	54	54	230	3	12	230	22%	5.5%	418		
Peace Cereal	Peace Cereal	Vanilla Almond	Adult	Yes	Yes	52	54	240	3	11	210	20%	5.5%	382		
Peace Cereal	Peace Cereal	Walnut Spice	Adult			52	55	230	5	17	160	31%	9.1%	291		
Peace Cereal	Peace Cereal	Wild Berry Crisp	Adult			40	56	55	220	3	7	330	13%	5.5%	600	
Post																
Post	Alpha Bits		Family	Yes	Yes	70	46	44	28	110	2	10	180	36%	7.1%	643
Post	Bran Flakes		Adult			50	50	54	30	100	5	5	180	17%	16.7%	600
Post	Golden Crisp		Family			44	46	46	27	110	1	14	25	52%	3.7%	93
Post	Grape Nuts (Regular)		Adult			70	70	58	200	7	5	290	9%	12.1%	500	
Post	Grape Nuts		Adult			58	58	29	110	3	4	125	14%	10.3%	431	
Post	Honey Bunches of Oats	Honey Roasted	Adult			50	54	54	30	120	2	6	140	20%	6.7%	467
Post	Honey Bunches of Oats	Raisin Medley	Adult			54	52	200	2	14	180	27%	3.8%	346		
Post	Honey Bunches of Oats	with Almonds	Adult			52	52	54	32	130	2	6	135	19%	6.3%	422
Post	Honey Bunches of Oats	with Cinnamon Clusters	Adult			54	54	30	120	2	6	150	20%	6.7%	500	
Post	Honey Bunches of Oats	with Pecan Bunches	Adult			48	29	120	1	6	140	21%	3.4%	483		
Post	Honey Bunches of Oats	with Real Strawberries	Adult	Yes	Yes	48	52	54	31	120	2	8	125	26%	6.5%	403
Post	Honey Bunches of Oats	with Vanilla Clusters	Adult	Yes	Yes	54	58	56	220	4	12	170	21%	7.1%	304	
Post	Honey Bunches of Oats Just Bunches	Honey Roasted	Adult	Yes	Yes	58	58	57	250	4	14	80	25%	7.0%	140	
Post	Honey Comb	(Regular)	Child	Yes	Yes	36	40	32	130	1	10	180	31%	3.1%	563	
Post	Pebbles	Boulders Chocolate Peanut Butter	Child	Yes	Yes	24	38	26	30	120	0	11	190	37%	0.0%	296
Post	Pebbles	Cocoa	Child	Yes	Yes	24	38	26	30	120	0	11	190	37%	0.0%	633
Post	Pebbles	Fruity	Child	Yes	Yes	24	38	26	30	120	0	11	190	37%	0.0%	633
Post	Pebbles	Marshmallow	Child	Yes	Yes	28	27	110	0	10	180	37%	0.0%	667		
Post	Raisin Bran		Family			48	48	50	59	190	8	19	250	32%	13.6%	424
Post	Selects	Blueberry Morning	Adult			46	48	55	220	2	16	210	29%	3.6%	382	
Post	Selects	Maple Pecan Crunch	Adult	Yes	Yes	48	56	52	210	4	12	125	23%	7.7%	240	

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						2006	2009	2012 size (g)	Serving size (g)	Calories (kcal)	Fiber (g)	Sugar (g)	Sodium (mg)	Sugar (% of g)	Fiber (% of g)	Sodium (mg per 100 g)
Post	Selects Great Grains	Banana Nut Crunch	Adult	Yes	Yes	56	59	240	7	11	140	19%	11.9%	237		
Post	Selects Great Grains	Cranberry Almond Crunch	Adult	Yes	Yes	56	58	48	180	5	12	105	25%	10.4%	219	
Post	Selects Great Grains	Crunchy Pecans	Adult	Yes	Yes	54	58	52	210	5	8	150	15%	9.6%	288	
Post	Selects Great Grains	Raisin Date Pecan Original	Adult	Yes	Yes	56	58	55	210	5	13	135	24%	9.1%	245	
Post	Shredded Wheat	Spoon Size Honey Nut	Adult	Yes	Yes	82	82	82	160	6	0	0	0%	12.8%	0	
Post	Shredded Wheat	Spoon Size Lightly Frosted	Adult	Yes	Yes	70	68	72	59	220	6	12	60	20%	10.2%	102
Post	Shredded Wheat	Spoon Size Original	Adult	Yes	Yes	74	56	200	6	12	0	21%	10.7%	0		
Post	Shredded Wheat	Spoon Size Wheat 'n Bran	Adult	Yes	Yes	82	70	82	49	170	6	0	0%	12.2%	0	
Post	Waffle Crisp		Adult	Yes	Yes	82	82	82	59	200	9	0	0%	15.3%	0	
Post	Waffle Crisp		Family	Yes	Yes	42	44	44	30	120	1	12	115	40%	3.3%	383
Quaker																
Quaker	Cap'n Crunch	(Regular)	Family			26	44	28	27	110	1	12	200	44%	3.7%	741
Quaker	Cap'n Crunch	Chocolatey Crunch	Family			38	27	110	1	11	125	41%	3.7%	463		
Quaker	Cap'n Crunch	OOPS! All Berries	Family			30	32	130	1	15	210	47%	3.1%	656		
Quaker	Cap'n Crunch	Peanut Butter Crunch	Family			40	32	32	27	110	1	9	200	33%	3.7%	741
Quaker	Cap'n Crunch	with Crunchberries	Family			30	30	28	26	110	1	11	190	42%	3.8%	731
Quaker	Life	(Regular)	Family			54	54	54	32	120	2	6	160	19%	6.3%	500
Quaker	Life	Cinnamon	Family			52	52	32	32	120	2	8	150	25%	6.3%	469
Quaker	Life	Maple & Brown Sugar	Family			52	52	32	32	120	2	8	150	25%	6.3%	469
Quaker	Life Crunchtime	Apple Cinnamon	Family			58	32	110	6	7	90	22%	18.8%	281		
Quaker	Life Crunchtime	Strawberry	Family			58	32	110	6	6	90	19%	18.8%	281		
Quaker	Natural Granola	Apple Cranberry Almond	Adult			58	49	200	5	13	25	27%	10.2%	51		
Quaker	Natural Granola	Low-fat	Adult	Yes	Yes	50	58	210	5	14	130	25%	9.1%	236		
Quaker	Natural Granola	Oats & Honey & Almonds	Adult	Yes	Yes	70	48	200	5	10	25	21%	10.4%	52		
Quaker	Natural Granola	Oats & Honey & Raisins	Adult	Yes	Yes	46	46	70	51	210	5	13	30	25%	9.8%	59
Quaker	Oat Bran Cold Cereal		Adult	Yes	Yes	58	58	57	210	6	9	210	16%	10.5%	368	
Quaker	Oatmeal Squares	Brown Sugar	Adult	Yes	Yes	54	54	70	56	210	5	9	190	16%	8.9%	339
Quaker	Oatmeal Squares	Cinnamon	Adult	Yes	Yes	54	56	70	56	210	5	9	190	16%	8.9%	339
Quaker	Oatmeal Squares	Golden Maple	Adult	Yes	Yes	56	70	56	210	5	9	190	16%	8.9%	339	

