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# The impact of marketing of 'junk' foods on children's diet and weight

Bridget P. Kelly

*University of Wollongong*, [bkelly@uow.edu.au](mailto:bkelly@uow.edu.au)

Lesley King

*University of Sydney*

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# The impact of marketing of 'junk' foods on children's diet and weight

## **Abstract**

Contemporary Western(ised) society is typified by pervasive and aggressive brand promotion, through all communication platforms. Food promotion in particular is a dominant area of marketing, particularly the marketing by large multinational food companies that manufacturer less healthy foods and beverages (Cairns et al. , 2013). The ubiquitous marketing of these unhealthy foods contributes to creating a negative food culture that undermines international and national nutrition recommendations and guidelines for disease prevention. Specifically, frequent exposure to persuasive promotions for unhealthy foods serves to normalise these food products as part of everyday life, create positive brand images, and ultimately encourage (over) consumption of these foods (Hoek and Gendall, 2006). The Diet, Nutrition and the Prevention of Chronic Diseases report published by the Food and Agriculture Organization and the World Health Organization (WHO) in 2003 concluded that the heavy marketing of fast food outlets and energy dense, micronutrient poor foods and beverages ('junk foods') is a probable causal factor in overweight and obesity, and is a target for future interventions (World Health Organization, 2003). Since this time, limiting children's exposure to unhealthy food marketing has been on the international public health agenda. Over the past decade there have been at least seven major systematic reviews of the scientific evidence relating to the impact of food marketing on children (Dalmeny et al. , 2003; Hastings et al. , 2003, 2006; Escelante de Cruz, 2004; Livingstone, 2006; McGinnis et al. , 2006; Cairns et al. , 2009). The most recent systematic review, commissioned by the World Health Organization in 2008, identified that food marketing has a modest impact on nutrition knowledge, food preferences and consumption patterns, and that these effects operate at both the brand and food category level (Cairns et al. , 2009). In other words, not only does food marketing contribute to brand switching within a food category, but also leads to switching between less marketed foods to more highly marketed food types. These findings are concerning as the most commonly promoted foods have been identified as sugar-sweetened breakfast cereals, savoury snacks, fast food restaurants, confectionery and soft drinks (Cairns et al. , 2009). This chapter provides a detailed overview of the scope and impact of food marketing on children, including: 1. the extent of children's exposure to unhealthy food promotions, as evidenced by studies measuring the prevalence of promotions through a range of media; 2. policy responses to unhealthy food promotion, including at the international level and exemplars of good practice by national and provincial governments, and policy actions by the food and advertising industries; and 3. evidence linking food promotions to food consumption and nutrition and weight outcomes. In the latter section, we provide a conceptual framework of cause and effect to indicate how immediate impacts of exposure to promotions (e.g. brand awareness and recall) can be linked to subsequent, downstream behavioural and health-related outcomes.

## **Keywords**

weight, diet, marketing, children, impact, foods, junk

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## **Chapter 36: The impact of marketing of 'junk' foods on children's diet and weight**

*B. Kelly and L. King,*

*University of Wollongong, Australia*

**Abstract:** Children are exposed to large volumes of unhealthy food marketing which serves to normalise these food products, influence brand perceptions, and ultimately encourage their consumption. This chapter discusses the scope and impact of food marketing on children, including the extent that children are exposed to this marketing, and government and industry responses to limit the impact of this marketing. Evidence linking food marketing to nutrition and weight outcomes is considered and a schema representing the range of responses to marketing is presented, showing how immediate impacts of exposure to promotions (e.g. brand awareness and recall) can be linked to subsequent behavioural and health-related outcomes.

**Keywords:** Food; Beverage; Marketing; Advertising; Child

### **36.1 Introduction**

Contemporary Western(ised) society is typified by pervasive and aggressive brand promotion, through all communication platforms. Food promotion, in particular, is a dominant area of marketing, particularly the marketing by large multinational food companies that manufacturer less healthy foods and beverages (Cairns et al., 2013). The ubiquitous marketing of these unhealthy foods contributes to creating a negative food culture that undermines international and national nutrition recommendations and

guidelines for disease prevention. Specifically, frequent exposure to persuasive promotions for unhealthy foods serves to normalise these food products as part of everyday life, create positive brand images, and ultimately encourage (over) consumption of these foods (Hoek and Gendall, 2006).

The *Diet, Nutrition and the Prevention of Chronic Diseases* report published by the Food and Agriculture Organization and the World Health Organization (WHO) in 2003, concluded that the heavy marketing of fast food outlets and energy dense, micronutrient poor foods and beverages ('junk foods') is a probable causal factor in overweight and obesity, and is a target for future interventions (World Health Organization, 2003). Since this time, limiting children's exposure to unhealthy food marketing has been on the international public health agenda.

Over the past decade there have been at least seven major systematic reviews of the scientific evidence relating to the impact of food marketing on children (Dalmeny et al., 2003, Escelante de Cruz, 2004, Hastings G et al., 2006, Livingstone, 2006, McGinnis et al., 2006, Hastings G et al., 2003, Cairns et al., 2009). The most recent systematic review, commissioned by the WHO in 2008, identified that food marketing has a modest impact on nutrition knowledge, food preferences and consumption patterns, and that these effects operate at both the brand and food category level (Cairns et al., 2009). In other words, not only does food marketing contribute to brand switching within a food category, but also leads to switching between less marketed foods to more highly marketed food types. These findings are concerning as the most commonly promoted

foods have been identified as sugar-sweetened breakfast cereals, savoury snacks, fast food restaurants, confectionery and soft drinks (Cairns et al., 2009).

This chapter provides a detailed overview of the scope and impact of food marketing on children, including: 1) the extent of children's exposure to unhealthy food promotions, as evidenced by studies measuring the prevalence of promotions through a range of media; 2) policy responses to unhealthy food promotion, including at the international level and exemplars of good practice by national and provincial governments, and policy actions by the food and advertising industries; and 3) evidence linking food promotions to food consumption and nutrition and weight outcomes. In the later section, we provide a conceptual framework of cause and effect to indicate how immediate impacts of exposure to promotions (e.g. brand awareness and recall) can be linked to subsequent, downstream behavioural and health-related outcomes.

### **36.2 Extent of children's exposure to food and beverage marketing**

Research studies have repeatedly demonstrated that children are exposed to high levels of unhealthy food and beverage marketing across a range of media, including on commercial television (Adams A et al., 2009, Boyland EJ et al., 2011, Powell LM et al., 2011, Kelly B et al., 2010), on product packaging (Harris J.L et al., 2010), in children's magazines (Kelly B and Chapman K, 2007, Jones SC et al., 2012), on popular children's websites (Kelly B et al., 2008a, Lingas EO et al., 2009), in outdoor advertisements near schools and other child-serving institutions (Kelly B et al., 2008b,

Hillier A et al., 2009), and through sponsorship arrangements with children's sport (Kelly B et al., 2011, Maher A et al., 2006) and schools (Molnar A et al., 2008).

For example, in an international study comparing patterns of television advertising across 11 countries in 2009, including from Australasia, North and South America and Eastern and Western Europe, almost 68,500 advertisements were identified in 2,449 hours of television recordings, and food was the most frequently promoted product type (18% of all ads). Two-thirds of food advertisements were for unhealthy products, although this increased to almost 90% in some countries, including Germany, the USA and Canada (Kelly B et al., 2010). Another study showed that, of all outdoor food advertising within a 500m radius around 40 randomly sampled primary schools in Sydney, Australia, 80% were for unhealthy foods and beverages (Kelly B et al., 2008b). In the USA, an analysis of the 30 most popular children's websites identified advertisements for 93 unique food products, most of which were foods that would not be permitted to be sold in school canteens (Lingas EO et al., 2009).

Marketers use increasingly integrated approaches in marketing campaigns, whereby multiple media channels are used to promote commercial messages (Cairns et al., 2013). This integrated approach ensures that children are repeatedly exposed to promotions throughout all facets of daily life: in the home, at school, during recreational activities and through peer-to-peer interactions. The use of multiple platforms increases the credibility of commercial messages, where these are viewed as independent sources of information (Voorveld HAM et al., 2011). While relatively unstudied,

marketers are progressively using new media, including through Web 2.0 platforms, which refers to the use of consumer-generated content, such as on social networking sites like Facebook and YouTube (Freeman B and Chapman S, 2007).

Furthermore, evidence highlights the common use of persuasive techniques specifically designed to appeal to and attract children (Boyland et al., 2012). In analyses of techniques used on websites of 130 food companies known to have the greatest expenditure on all marketing promotions in the USA, almost half of the sites had a designated children's section and most of these children's sections contained 'advergaming' (branded online games) and other interactive components (Henry AE and Story M, 2009). Only one in ten sites with a children's section were for products that met nutrition criteria for healthy products. In an Australian study assessing the use of promotional characters, including cartoons and celebrities on food packaging across three large supermarkets, more than 350 unique products displaying promotional characters were identified, of which three-quarters were classified as unhealthy (Hebden L et al., 2011). Almost all promotional characters were company-owned cartoon characters, considered to be of primary appeal to children.

### **36.3 International policy to reduce the impact of unhealthy food and beverage marketing to children**

Limiting children's exposure to the promotion of unhealthy foods and beverages has been increasingly recognised as a target for childhood obesity prevention policy. In 2010, the WHO released a set of recommendations on the marketing of these products

to children, which aim to guide countries in developing new and/or strengthening existing policies in this area (World Health Organization, 2010). Specifically, these recommendations establish that the aim of policy should be to reduce the impact of marketing of unhealthy foods and beverages on children, whereby 'impact' refers to the extent of children's exposure to this marketing and the persuasive power of promotions. Governments were identified as the key stakeholders in the development of food marketing policy, including policy implementation, monitoring and evaluation (World Health Organization, 2010).

In contrast, most policy development in this area has been undertaken by the food and advertising industries, through the development of self-regulatory approaches (Hawkes C, 2007). These codes of practice typically claim to ensure 'socially responsible marketing' of foods and beverages, rather than to explicitly reduce children's exposure to this marketing (Yale Rudd Center for Food Policy & Obesity, 2013). This is an important distinction, as policy evaluations use different measures and make different conclusions depending on policy objectives. For example, the Australian food retail industry code stipulates that food advertisements must provide healthy lifestyle messages (Australian Food and Grocery Council, 2009). Indicators of policy implementation success could therefore relate to the presence of messages related to physical activity or balanced diets in unhealthy food advertisements, rather than assessing changes to children's exposure to unhealthy food promotions. Independent studies that have assessed changes to children's marketing exposure following the introduction of industry codes of practice have identified that these policies have had no

impact on children's exposure to unhealthy food advertising on television, including studies from Australia (King L et al., 2010, Hebden et al., 2011), Canada (Kent MP et al., 2012), and the USA (Kunkel D et al., 2009).

There are notable instances where national and provincial governments have taken a strong stance against unhealthy food marketing to children and introduced statutory regulation to limit children's exposure, including in Norway, South Korea, the UK, and in Quebec, Canada. Evaluations of these regulations have demonstrated positive changes in the food marketing environment for children. For example, the South Korean government introduced the *Special Act on Safety Management of Children's Dietary Life* in 2010, which restricts advertisements for unhealthy 'children's foods' from being advertised on television between 17:00 and 19:00 daily and during children's programs broadcast outside of these times (Korean Ministry of Food and Drug Safety, Kim et al., 2013). Subsequently, gross ratings points (GRPs) for unhealthy food advertisements, which represent the size of the audience exposed to an advertisement within a given time period, have decreased by 82% during restricted broadcast times and by 50% at other times since the introduction of the regulations (Kim et al., 2013).

In the UK, the government introduced a ban on the scheduling of advertisements for foods and beverages high in fat, sugar and/or salt during programs with a disproportionately high child audience (when the viewing audience over represents the population distribution of children by at least 20%). Following the full implementation of this regulation in 2009, young children were estimated to see 52% fewer unhealthy food

advertisements compared to 2004, and were exposed to 84% fewer food advertisements featuring licensed characters, 56% fewer advertisements with branded characters and 41% fewer advertisements with promotions (Office of Communication, 2010).

## **36.4 Food marketing effects on food consumption and nutrition and weight outcomes**

### 36.4.1 Children as a vulnerable audience

Information from psychological research indicates that children are highly vulnerable to marketing. Younger children are thought to consider commercial information to be mostly true and unbiased (Wackman DB and Wartella E, 1977), and do not recognise the *selling* intent of marketing (to promote a product based on its features and qualities) until at least seven or eight years (Kunkel et al., 2004). It is not until later still that children recognise the *persuasive* intent of marketing: that advertisers use appealing and compelling techniques to increase interest in a product (Carter et al., 2011). Even adolescents, however, are thought to be more vulnerable to marketing effects than adults, due to the neurological changes that occur during this development period and their relative inexperience in processing and navigating commercial messages (Pechmann et al., 2005). At this time, adolescents are susceptible to social pressures and peer influences (Pechmann et al., 2005), which are exploited by the marketing industry, such as through peer-to-peer marketing on social networking websites. Brands are also symbolised in marketing communications targeting adolescents to represent desired image attributes, such as 'coolness' and sexuality (Pechmann et al., 2005).

### 36.4.2 Challenges for researchers in determining the impact of marketing on children

Due to the pervasive nature of food marketing in most societies, research to identify a causal association between food marketing exposure and nutrition and weight outcomes, such as could be elucidated through randomised controlled trials, is difficult. This is because most children are exposed to large volumes of promotions, thereby impeding the identification of a control group for comparison. The considerable extent of this 'baseline' marketing exposure also means that any experimental trials that variably expose children to episodes of marketing, with the intent to determine the effect of this exposure on food behaviours, are swamped by previous exposures. Therefore, exposures to test advertisements are diminutive compared to children's lifetime exposures to marketing, and responses to test advertisements are likely to be smaller than would be the case with cumulative exposure over time.

### 36.4.3 Schema of effects of food marketing exposures

Despite these considerable difficulties in undertaking research to define the effects of food marketing on children, there is available evidence to indicate the logical sequence of marketing effects: where promotions impact on children's brand awareness and recall, brand preference, brand purchase, consumption patterns, and consequently nutrition and weight outcomes (see Table 36.1). Research can test associations between marketing exposures and outcomes along this hierarchy of effects, with proximate outcomes of exposure, including changes to brand recall and attitudes, being simpler to test and confirm than distal effects on nutrition status and body weight. This

sequence is influenced by the extent of exposures, with repetition of exposure serving to reinforce commercial messages and strengthen the sequence of attitudes and behaviours. The delivery of messages through multiple media also ensures repeated and continued exposure, and consolidates brand awareness. Preferences for products can then be actualized, particularly where there is exposure to point-of-purchase prompts, such as outdoor advertising near shops and promotions at the point-of-sale or on food packages.

The following sections describe methods that have been used to assess the impact of food marketing exposures along this hierarchy of effects, and provide a summary of findings from available research.

### *Food marketing and brand awareness and recall*

The first step in the logic chain linking children's food marketing exposure to nutrition and weight outcomes relates to the effect of exposure on awareness of promoted brands and marketing campaigns. Recall of brands and campaigns can be assessed either directly, by questioning children about marketing campaigns that they have seen; or indirectly, using association tasks to match brands to food types or related attributes. These types of studies have identified that children have high recall of food promotions, including being able to associate brand logos with food types (Ueda et al., 2012, Arredondo et al., 2009), and matching brands to sponsored sporting events and teams (Pettigrew S et al., 2013). In general, brand awareness is related to the amount of advertising that a child is exposed to and increases with age (Fan and Li, 2010).

### *Food marketing and food preferences*

The development of brand awareness subsequently influences food preferences by increasing children's familiarity with brands and reducing food neophobia, or the trial of new foods (Dias M and Agante L, 2011), and through the normalisation of these products. The effect of food marketing on brand preferences can be identified in studies that ask children about perceived attributes or qualities of promoted products or of perceived consumers of products. For example, children can be asked to rate brands along dimensions such as 'fun-boring' or 'exciting-unexciting'. Desire for promoted products can also be demonstrated in experimental trials which measure reported preference for a food product after short-term episodic exposure to a food promotion, as compared to children who are not exposed to the food promotion. Such experimental trials have found that children who are exposed to unhealthy food promotions, that may be embedded in online games or television programs, are more likely to subsequently report preferring related unhealthy foods than children who are exposed to healthy food or non-food promotions (Redondo I, 2012, Dias M and Agante L, 2011).

Further, there is a growing body of evidence to indicate that children prefer food products that are associated with promotional characters, such as when these are shown on their packaging. In these studies, children are often presented with foods with or without a branded character on the packaging and asked to rate their preference for these foods. The presence of characters has been shown to significantly increase children's liking of the foods (Lapierre MA et al., 2011, Roberto CA et al., 2010).

*Food marketing and food purchases and requests*

A range of methods have been used to assess the impact of food marketing on product purchases. One outstanding study compared household expenditure data for fast food between French- and English-speaking households in Quebec, Canada and between English-speaking households in Ontario (Dhar and Baylis, 2011). As noted in section 36.3, a ban has been in place on advertising to children in Quebec since 1980, although this only applies to channels originating from this province. Channels that are broadcast into Quebec from neighbouring provinces and countries are English-language channels. This study found that French-speaking households with children in Quebec were significantly less likely to purchase fast food compared to similar households in Ontario. Comparatively, there were no differences in purchases of fast food between English-speaking households in these two provinces. Therefore, fast food purchases were lower for households with children in Quebec, who were not exposed to other sources of television advertising. This study design overcomes limitations of controlled, laboratory-based experiments, which may not represent real-world behaviours.

Other studies have surveyed parents about the extent that children request advertised food products; and observed parent and child interactions within supermarkets to identify the frequency that parents accede to these requests. Most parents generally agree that food advertising leads children to pester them for food products (Yu, 2012, Ogba I and Johnson R, 2010), and parents agree to buy up to half of all products requested by children when grocery shopping (Atkin, 1978).

### *Food marketing and food consumption*

Most studies in this domain have included experimental trials to assess the impact of exposure to unhealthy food promotions (versus non-food or healthy food promotions) on immediate changes to food consumption, either while watching television with embedded advertisements or immediately afterwards. Factors that may influence the amount of food consumed by children, other than exposure to the food promotions, include children's pre-test hunger, preference for the test food, time of day of the testing and importantly, prior accumulated exposure to advertising.

One early innovative study that sought to overcome limitations of the short-term nature of many experimental trials was conducted at a two-week summer camp, whereby children were exposed to controlled advertising and snack choices (Goris et al., 2010). In this study, children who were exposure to almost five minutes per day of television advertisements for confectionery chose significantly less fruit as a snack over the two weeks compared to children who saw advertisements for fruit, public service announcements to limit sugar intake, or no advertisements.

Other studies have used correlational techniques to determine cross-sectional associations between children's exposure to television advertisements for fast food and sugary drinks and their consumption of these products. In one US study, dietary intake and anthropometric data from a national cohort of children was compared to industry data on children's exposure to television advertisements over three years (Andreyeva et

al., 2011). Higher intakes of soft drink and fast food were observed with increased exposure to advertisements for these products: for every additional 100 soft drink advertisements viewed over three years, consumption of soft drink increased by 9.4%; and for the same magnitude of increase in exposure to fast food advertisements, consumption of fast food increased by 1.1%. Advertisements for these product types also had a corresponding effect on the consumption of other unhealthy foods and drinks not shown in these advertisements. This suggests that advertisements for unhealthy food/drinks may have dualistic effects on increasing consumption of other unhealthy products.

Responses to food marketing may differ between children of different weight status. In an experimental trial from the USA, overweight children were found to consume 40kcal more when food was presented in branded packages compared to when this was presented in unbranded packages (Forman et al., 2009). Conversely, non-overweight children consumed 45kcal less in the branded condition. Similarly, in a UK study, obese children were found to consume 471 kcal more from snack foods after they were exposed to unhealthy food advertisements, compared to when they were exposed to non-food advertisements within a two week period (Halford et al., 2008). This compared with an increase of 306 kcal in the overweight and 250 kcal in the normal-weight children.

*Food marketing and nutrition and weight outcomes*

The final component of the hierarchy of effects of food marketing is the impact of marketing exposures on nutrition and weight outcomes. Few longitudinal studies are available that follow children over time to determine the impact of higher and lower marketing exposures on nutrition and weight outcomes prospectively. As discussed in section 36.4.2, such studies are difficult as there is little variation in marketing exposures between children within the same culture, with most children exposed to large volumes of food promotions. However, some studies have compared differences in exposure to commercial television and compared this to weight status over a five year period (Zimmerman and Bell, 2010). Based on parent report of television viewing, each hour of commercial television that younger children (aged <7 years) watched per day in 1997 was associated with a 0.1 increase in BMI z-scores in 2002. There was no association between children's exposure to non-commercial television and weight status at follow up, indicating that in-program advertisements were contributing to weight outcomes rather than the act of watching television itself.

Mathematical modelling studies have sought to determine the magnitude of obesity that can be attributed to exposure to unhealthy food marketing. One such study compared data from a US national dietary survey to children's television viewing habits (Veerman et al., 2009). In this study, an increase in television food advertising exposure by 25 minutes per week was estimated to cause a child to consume one additional snack per week (1.4% energy increase). The researchers estimated that a 4.5% reduction in energy intake would occur if television food advertising exposure reduced from 80.5

min/week to nothing. However, the estimation of marketing effects on energy intake was based on just one study conducted in 1983.

A later study made estimates of advertising impact on energy intake based on expert opinion rather than measured data. The study used an estimate of energy intake attributable to television food advertising exposure, derived from experts in a Delphi survey, and applied this estimate to obesity prevalence data from multiple countries with higher and lower advertising exposures (Goris et al., 2010). The contribution of television food advertising exposure to energy intake was highest in countries with the greatest obesity prevalence and the highest rates of advertising, for which 40% of obese children were predicted to have not been obese in the absence of food advertising exposure (Goris et al., 2010).

### **36.5 Future trends**

It is acknowledged that patterns of food marketing across different media are changing, largely through the advent of new media, such as social media, that provide unique opportunities to engage consumers. The traditional mode of television viewing is being superseded (by younger generations at least) with new methods of viewing content, and importantly of skipping blocks of advertisements. This poses new challenges for monitoring exposure to this marketing and for regulating marketing practices, whilst providing opportunities for highly personalised and seductive messages to vulnerable children and adolescents.

WHO recommendations and implementation actions have arguably raised the profile and awareness of this problem, particularly amongst emerging economies, and have the potential to provide sound guidance for governments to take action. Research is also accumulating, both in documenting the extent of food marketing across different countries, so as to guide policy responses, and in refining our understanding of the effects of this marketing.

Nevertheless, internationally the negative impacts of food marketing on children's nutrition and health is likely to continue into the foreseeable future. Fundamental change is required to transform cultural norms, whereby the promotion of 'junk' food to children is no longer seen as acceptable. Such change will require widespread population awareness of the issue, political impetus for action and a food industry that is committed to being socially responsible.

There has been no overall abatement in the extent or persuasive nature of food advertising (with some notable exceptions). This is largely the case because industry self-regulatory approaches have become the major policy response, despite the accumulating evidence that industry policies have been designed to minimise any changes to marketing practices and have had minimal impact on reducing children's exposure to unhealthy food marketing. The development of these self-regulatory approaches has, however, allowed industry to claim that it is committed to responsible marketing to children and stalled any government intervention in many countries.

### **36.6 Sources of further information and advice**

This chapter provides a structured overview of research related to the extent of food marketing to children, the types of effects that marketing has on children's nutrition and health, and some indications of the effectiveness of policy responses. The chapter also indicates some of the methodological approaches and issues related to generating evidence in this area. The reference list provides a good starting point for readers interested in exploring some of these issues further. For future developments in this field readers could refer to the following sources:

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