

CHILD NUTRITION

Television (TV) and TV Advertisement Influences on Children's Eating Behaviour

Chrisa Arcan, PhD, Meg Bruening, MPh, RD, Mary Story, PhD

University of Minnesota, USA

September 2013

Introduction

While multiple factors influence eating behaviours and food choices of youth, two potent forces are television (TV) viewing and exposure to TV food advertising. In the United States, children and adolescents watch TV for almost four and a half hours each day.¹ During this time, children between the ages of 2 to 12 are exposed to up to a total of 38 minutes of advertising each day. Food advertising accounts for half of all advertising time in children's TV programs. Children between 2 to 7 years see 12 food ads and those between 8 to 12 years see 21 food ads each day, or 7,609 ads each year.² While some data indicate that food advertising to young children has decreased since a peak in 2004,³ the number of food advertisements and the types of foods advertised remains disturbing.

A major determinant of food preferences is taste. Eating habits and taste preference develop early in life and remain relatively stable through young adulthood.^{4,5} As taste preferences are acquired through learning processes⁶ including repeated exposure and positive messaging about various foods, exposure to TV viewing early in life can have a marking lifelong influence in eating

practices.

Subject

Food and beverage marketing and children's eating behaviours

Food and beverage marketing is a major factor that influences children's food preferences and purchasing requests.⁶⁻⁸ Marketers use many avenues to reach children with their messages such as using popular cartoon characters and toy giveaways to increase the pester-power of youth.⁹⁻¹¹ Billboards, in-school advertisements, TV commercials, product placement in television shows/movies/video games and in grocery stores, Internet websites and games, and smart phone applications are often used to deliver messages and engage youth.^{6,9} While technology and advertising techniques are changing, television remains the most prominent method of marketing food and beverages to youth, especially for those in early childhood.^{3,12} Annually, the food and beverage industry spends \$1.23 billion on marketing food and beverages to children under the age of 12 years.¹³

Exposure to unhealthy TV food marketing

The diets of American children are inadequate in nutrient-dense foods (i.e., fruits, vegetables, low-fat dairy, and whole grains), and are high in energy-dense foods and beverages (i.e., chips, fast food, soda). More than any other foods/beverages, children are exposed to marketing messages for unhealthy foods, such as sugary breakfast cereals, fast food restaurants and snack foods such as chips, desserts, candy, sugar-sweetened beverages, and yogurt.^{3,14} Exposure to unhealthy foods through TV marketing has been linked to increased preferences for marketed foods.^{7,10,15} Since most of children's food preferences are formed during early childhood¹⁶ children are at risk for forming life-long preferences for foods laden in calories, fat, and added sugars and, thus, are also at increased risk for obesity due to TV food marketing practices.^{6,15,17}

Research Context

Influence of TV viewing and advertising on eating behaviours of children

As one-third of U.S. children and adolescents are overweight or obese, it is critical to examine the extent to which TV viewing and TV food advertising negatively influence current and future eating behaviours among children and adolescents. It is also important to discuss potential regulations that can protect children from TV ads and deceptive marketing. Finally, given the ubiquitous

nature of TV advertising, implications for policy, parents and service providers will be discussed.

Key Research Questions

Is there an association between TV viewing and advertising and eating behaviours?

- Is there a difference in exposure to TV advertising among various racial groups?
- Are TV viewing and TV food advertising associated with diet-related health issues such as obesity in children?
- Are policies and recent industry self-regulation of TV advertising effective in influencing eating behaviours of children?

Recent Research Results

The association between TV viewing / advertising and children's eating behaviours

It has been documented that among young children, TV viewing is significantly associated with increased consumption of unhealthy foods, including fast food,¹⁸ increased requests of foods seen on TV, and more positive attitudes toward unhealthy foods.^{8,19} The Institute of Medicine (IOM) committee conducted a systematic review of the scientific evidence and concluded that TV advertising influences the food preferences, purchase requests and diets, at least of children under age 12 years.⁶ This evidence is more apparent in younger groups as more studies have been conducted with younger children than with adolescents.

Recent cross-sectional studies with young children have shown that exposure to food advertising was associated with increased consumption of advertised brands, energy-dense foods, soda and fast food,^{20,21} but overall food consumption was only related to television viewing and not to advertising exposure in some studies.²⁰ There are few prospective studies supporting the negative impact of TV viewing on dietary behaviours; an increase of 167 kcal/day was found per each hour of increase in TV viewing among 11 year old children.²² The only study with older adolescents found that those who were heavy TV viewers during high school had less healthful eating habits during the transition to young adulthood.²³

Several experimental studies have demonstrated the effect of TV food advertising on increasing food intake.^{4,15,24,25} In a recent experiment, elementary school-aged children who saw unhealthy food advertising while watching a children's cartoon program consumed 45% more snacks than

the group of children who watched the program with non-food advertising.⁴ Conversely, children's attitudes and beliefs toward healthy foods were positively impacted by advertisements of healthy foods, but these positive effects were reduced when advertisements of unhealthy foods were shown alongside healthy foods.⁸

Ethnic minority exposure to TV viewing and advertising

Recent findings indicate that food marketing to ethnic minority groups has increased in the past decade.²⁶ There are racial disparities in media use and the greatest differences are for TV time.¹ However, research on TV viewing and food advertising practices targeting ethnic minority populations is still scarce. The few available studies show that a higher proportion of food advertisements seen by black children are for fast food restaurants or they are higher in sugar than advertisements seen by white children.^{14,27-29} Hispanic preschool children see almost 300 advertisements for fast foods each year on Spanish-language channels alone.³⁰ Given the high rates of overweight and obesity among minority children and the higher consumption of sugar-sweetened beverages by African American and Hispanic³¹ than white children, these findings are especially concerning.

Television advertising and obesity

Although there is a substantial scientific evidence demonstrating the link between duration of TV viewing and children *adiposity* as well as TV viewing behaviour and future adiposity,^{18,32} fewer studies have shown a direct association between exposure to TV advertisement and obesity. Studies have also found a link between fast food restaurant advertising and body mass index,³³ indicating that if fast food advertising was banned, it would reduce the number of overweight 3 to 11 year old children by 18%.³³ Given the challenges involved in directly assessing the effect of advertising on obesity, simulation studies have been conducted. According to these studies, in the absence of TV advertising for food, the rate of overweight and obesity for 6 to 12 year old children would have been reduced by about 25% and 40%, respectively.^{34,35}

The role of family on exposure to TV viewing and advertising

Family communication and media education is an important component in mediating the negative effects of advertising on children's dietary behaviours. Although limited research exists in this area, the findings indicate that parental communication about advertising and setting rules about food consumption was more successful in reducing energy-dense food consumption by

their children than open discussion about consumption.³⁶ However it was more effective when parents imposed restrictions of advertising exposure to pre-school and early elementary school children than to older children.³⁶

Policies to limit television food advertising

The U.S. has a few regulations regarding TV food and beverage advertising to children, including industry self-regulatory policies. However, federal agencies have limited power to regulate against unfair and deceptive advertising practices to children.³⁷ In 2006, in partnership with the Council of Better Business Bureau's Children's Food and Beverage Advertising Initiative (CFBAI), a coalition of food companies pledged to improve the nutritional quality of foods advertised to children under the age of 12 years.³⁸ Also, the IOM committee has offered 10 recommendations to address activities by the food industry and public sector to support a healthful diet to children and adolescents.⁶ A review evaluating the progress made by industry stakeholders in marketing healthful foods to children revealed that food and beverage companies made some progress in promoting healthier products, but that limited progress was made by restaurants, industry trade associations and the media.³⁸ Despite the reported progress, overall TV food advertising to young children has increased by 9% between 2008 and 2010.³⁹ In addition, more than a quarter of all food/beverage advertising to children is from companies that do not participate in the coalition, including the majority of fast food establishments.^{38,40}

Research Gaps

While progress has been made in assessing the degree of exposure and content of TV advertisement to children and adolescents, more research is needed to elucidate the mechanisms involved in the exposure of TV advertisement and dietary choices of children. Also, there are research gaps on the effect of healthy food/beverage advertisement on the consumption of these foods. A benefit to policy initiatives will be to understand whether increased exposure to healthy food advertisement would cause a shift in children's consumption and preference for healthy foods and beverages. Family plays an important role, especially during the formative years, in modeling behaviour and enforcing rules and restrictions. Therefore, more research is needed to unveil the effects of parental communication styles relative to consumer-related issues on children's food choices. In addition, targeting parents to increase awareness about the food industry's marketing practices is needed.⁴¹ The effectiveness of the food industry's self regulation initiative has yet to be established, therefore, further studies are essential to

evaluate the advertising activities of the participating companies.

Conclusions

Children and adolescents spend a considerable amount of time watching television. As a result, youth are exposed to a large number of food and beverage advertisements each day. Among ethnic minority groups, this exposure is even higher. Television viewing is associated with unhealthy food consumption among children. There is sufficient evidence that TV advertising influences the food preferences, purchase requests and diets of children under the age of 12 years. Experimental studies supported the causal relationship of food advertising on children's eating behaviours, demonstrating that immediately following the food commercials young children were more likely to increase their caloric intake and snack foods. Although research is limited in the area of parental communication about food advertising, it has been shown that parental communication about food advertising and setting restrictions on advertising exposure protects against energy-dense food consumption among young children. From findings to date, causal relationship cannot be drawn between TV advertising exposure and obesity, however significant associations have been found between fast food advertising and child body mass index. Limited regulations on marketing to children exist in the U.S. and various European countries have a range of statutory and self-regulatory rules in place.³⁷ While Canada has a well-established system of self regulation, Quebec is the only province prohibiting commercial advertising directed at children under the age of 13.⁴²

Implications for Parents, Services and Policy

Despite the industry's positive actions to promote healthy lifestyles to children, companies continue to fail to protect children and adolescents from advertising unhealthy products as close to 69% of all advertising by companies participating in the coalition was for poor nutritional quality.⁴⁰ The food/beverage industry's self-regulation addresses the health needs of children ages 12 and younger leaving a large population of youth who have greater purchasing power and more autonomy to make food choices. Policies for nutrition and marketing standards should be implemented and enforced by federal, state and local governments in order to achieve uniform protection of the diets and health of children and youth.

According to American Academy of Pediatrics, children below the age of 2 should not watch TV and anyone older than 2 years should only watch 1 to 2 hours of quality programming per day.⁴²

Health care providers should be abreast of the latest research and policies regarding TV viewing and children’s dietary behaviours and obesity. At well-child visits, health care practitioner should discuss with families their TV habits and inform them about the negative impact of food advertising on children’s dietary behaviours.

Families play an important role in the lives of young children who depend on them for nourishment, role modeling, and setting rules for various activities such as TV viewing and advertising exposure. It is important that parents be aware of the amount of advertising exposure their children receive and its impact on their food preferences. Parents should also understand the importance of refraining from watching TV during meals, removing TV from children’s bedrooms, and generally limiting their children’s exposure to TV. One recommendation offered by IOM involves partnerships between government and the private sector to implement social marketing efforts targeted at educating and helping parents build skills to select and prepare healthful foods and beverages for their children.⁶ Teaching parents about communicating on consumer matters and media literacy may also benefit their children to make more informed eating choices.

References

1. Rideout VJ, Foehr UG, Roberts DF. Generation M2. Media in the Lives of 8- to 18-Year-Olds. A Kaiser Family Foundation Study. The Henry J. Kaiser Family Foundation, 2010. Available at: <http://www.kff.org/entmedia/upload/8010.pdf>. Accessed May 15, 2013.
2. Food for Thought. Television Food Advertising to Children in the United States. A Kaiser Family Foundation Report. The Henry J. Kaiser Family Foundation, March 2007. Available at: <http://kff.org/other/food-for-thought-television-food-advertising-to/>. Accessed May 15, 2013.
3. Rudd Center for Food Policy & Obesity. Trends in Television Food Advertising: Progress in Reducing Unhealthy Marketing to Young People? 2010. Available at: http://www.yaleruddcenter.org/resources/upload/docs/what/reports/RuddReport_TVFoodAdvertising_2.10.pdf. Accessed May 15, 2013.
4. Harris JL, Bargh JA. Television viewing and unhealthy diet: implications for children and media interventions. *Health Commun.* 2009;24(7):660-673.
5. Skinner JD, Carruth BR, Bounds W, Ziegler P, Reidy K. Do food-related experiences in the first 2 years of life predict dietary variety in school-aged children? *J Nutr Educ Behav.* 2002;34(6):310-315.
6. Institute of Medicine, Committee on Food Marketing and the Diets of Children and Youth. Food marketing to children and youth: Threat or opportunity, 2006.
7. Robinson TN, Borzekowski DL, Matheson DM, Kraemer HC. Effects of fast food branding on young children's taste preferences. *Arch Pediatr Adolesc Med.* 2007;161(8):792-797.
8. Dixon HG, Scully ML, Wakefield MA, White VM, Crawford DA. The effects of television advertisements for junk food versus nutritious food on children's food attitudes and preferences. *Soc Sci Med.* 2007;65(7):1311-1323.

9. Story M, French S. Food Advertising and Marketing Directed at Children and Adolescents in the US. *Int J Behav Nutr Phys Act* . 2004;1(1):3.
10. Lapierre MA, Vaala SE, Linebarger DL. Influence of licensed spokescharacters and health cues on children's ratings of cereal taste. *Arch Pediatr Adolesc Med*. 2011;165(3):229-234.
11. Lumeng J. Cartoon characters on food packages influence taste and snack preferences in young children. *J Pediatr*. 2011;158(1):170-171.
12. Linn SE. Food marketing to children in the context of a marketing maelstrom. *J Public Health Policy*. 2004;25(3-4):367-378.
13. Federal Trade Commission. Marketing Food to Children and Adolescents: A Review of Industry Expenditures, Activities, and Self-Regulation, 2008. Available at: <http://www.ftc.gov/os/2008/07/P064504foodmktgreport.pdf>. Accessed August, 25 2007.
14. Powell LM, Szczypka G, Chaloupka FJ. Exposure to food advertising on television among US children. *Arch Pediatr Adolesc Med*. 2007;161(6):553-560.
15. Halford JC, Boyland EJ, Hughes G, Oliveira LP, Dovey TM. Beyond-brand effect of television (TV) food advertisements/commercials on caloric intake and food choice of 5-7-year-old children. *Appetite*. 2007;49(1):263-267.
16. Birch LL. Development of food preferences. *Annu Rev Nutr*. 1999;19:41-62.
17. Lanfer A, Knof K, Barba G, et al. Taste preferences in association with dietary habits and weight status in European children: results from the IDEFICS study. *Int J Obes (Lond)*. 2011.
18. Chang H, Nayga Jr RM. Television Viewing, Fast-Food Consumption, and Children's Obesity. *Contemporary Economic Policy*. 2009;27(3):293.
19. Chamberlain LJ, Wang Y, Robinson TN. Does children's screen time predict requests for advertised products? Cross-sectional and prospective analyses. *Arch Pediatr Adolesc Med*. 2006;160(4):363-368.
20. Buijzen M, Schuurman J, Bomhof E. Associations between children's television advertising exposure and their food consumption patterns: a household diary-survey study. *Appetite*. 2008;50(2-3):231-239.
21. Andreyeva T, Kelly IR, Harris JL. Exposure to food advertising on television: associations with children's fast food and soft drink consumption and obesity. *Econ Hum Biol*. 2011;9(3):221-233.
22. Wiecha JL, Peterson KE, Ludwig DS, Kim J, Sobol A, Gortmaker SL. When children eat what they watch: impact of television viewing on dietary intake in youth. *Arch Pediatr Adolesc Med*. 2006;160(4):436-442.
23. Barr-Anderson DJ, Larson NI, Nelson MC, Neumark-Sztainer D, Story M. Does television viewing predict dietary intake five years later in high school students and young adults? *Int J Behav Nutr Phys Act*. 2009;6:7.
24. Dovey TM, Taylor L, Stow R, Boyland EJ, Halford JC. Responsiveness to healthy television (TV) food advertisements/commercials is only evident in children under the age of seven with low food neophobia. *Appetite*. 2011;56(2):440-446.
25. Halford JC, Boyland EJ, Hughes GM, Stacey L, McKean S, Dovey TM. Beyond-brand effect of television food advertisements on food choice in children: the effects of weight status. *Public Health Nutr*. 2008;11(9):897-904.
26. Grier SA, Mensinger J, Huang SH, Kumanyika SK, Stettler N. Fast-Food marketing and children's fast-food consumption: Exploring parents' influences in an ethnically diverse sample. *American Marketing Associations*. 2007;26(2):221.
27. Outley CW, Taddese A. A content analysis of health and physical activity messages marketed to African American children during after-school television programming. *Arch Pediatr Adolesc Med*. 2006;160(4):432-435.
28. Powell LM, Szczypka G, Chaloupka FJ. Trends in exposure to television food advertisements among children and adolescents in the United States. *Arch Pediatr Adolesc Med*. 2010;164(9):794-802.
29. Henderson VR, Kelly B. Food advertising in the age of obesity: content analysis of food advertising on general market and

- African American television. *J Nutr Educ Behav*. 2005;37(4):191-196.
30. Harris JL, Schwartz MB, Brownell KD. Marketing foods to children and adolescents: licensed characters and other promotions on packaged foods in the supermarket. *Public Health Nutr*. 2010;13(3):409-417.
 31. Wang YC, Bleich SN, Gortmaker SL. Increasing caloric contribution from sugar-sweetened beverages and 100% fruit juices among US children and adolescents, 1988-2004. *Pediatrics*. 2008;121(6):e1604-14.
 32. Vereecken CA, Todd J, Roberts C, Mulvihill C, Maes L. Television viewing behaviour and associations with food habits in different countries. *Public Health Nutr*. 2006;9(2):244-250.
 33. Chou SY, Rashad I, Grossman M. Fast-food restaurants advertising on television and its influence on childhood obesity. *Journal of Law and Economics*. 2008;51(4):599.
 34. Goris JM, Petersen S, Stamatakis E, Veerman JL. Television food advertising and the prevalence of childhood overweight and obesity: a multicountry comparison. *Public Health Nutr*. 2010;13(7):1003-1012.
 35. Veerman JL, Van Beeck EF, Barendregt JJ, Mackenbach JP. By how much would limiting TV food advertising reduce childhood obesity? *Eur J Public Health*. 2009;19(4):365-369.
 36. Buijzen M. The effectiveness of parental communication in modifying the relation between food advertising and children's consumption behaviour. *Br J Dev Psychol*. 2009;27(Pt 1):105-121.
 37. Hawkes C. Marketing Food to Children: Changes in the Global Regulatory Environment 2004-2006. Geneva: World Health Organization, 2007. Available at www.who.int/dietphysicalactivity/regulatory_environment_CHawkes07.pdf. Accessed May 15, 2013.
 38. Kraak VI, Story M, Wartella EA, Ginter J. Industry progress to market a healthful diet to american children and adolescents. *Am J Prev Med*. 2011;41(3):322-333.
 39. Harris JL, Vishnudas S. Trends in Television Food Advertising to Young People: 2010 Update. Rudd Center for Food Policy and Obesity, New Haven, CT, 2011. Available at http://www.yaleruddcenter.org/resources/upload/docs/what/reports/RuddReport_TVFoodAdvertising_6.11.pdf. Accessed May 15, 2013.
 40. Kunkel D, McKinley C, Wright P. The Impact of Industry Self-Regulation on the Nutritional Quality of Foods Advertised on Television to Children. Children Now. University of Arizona, 2009. Available at http://www.childrennow.org/uploads/documents/adstudy_2009.pdf. Accessed May 15, 2013.
 41. Ustjanauskas AE, Eckman B, Harris JL, Goren A, Schwartz MB, Brownell KD. Focus Groups with Parents: What do they think about food marketing to their kids? Rudd Center for Food Policy and Obesity. New Haven, CT, May 2010. Available at http://www.yaleruddcenter.org/resources/upload/docs/what/reports/RuddReport_FocusGroupsParents_5.10.pdf. Accessed May 15, 2013.
 42. American Academy of Pediatrics. The benefits of limiting TV. Available at <http://www.healthychildren.org/English/family-life/Media/Pages/The-Benefits-of-Limiting-TV.aspx>. Accessed May 15, 2013.