

Unhealthy Food and Drink Marketing on TV and Online and Childhood Obesity: The Evidence

In 2019, one third of children aged 11 were overweight or living with obesity¹. Children and adolescents with obesity are five times more likely to become adults with obesity than their healthy-weight counterparts².

Although many develop obesity through adulthood, research suggests that those with obesity from a young age are more likely to suffer from obesity-related diseases as an adult such as type-2 diabetes and metabolic syndrome³ and a damaged cardiovascular system which may trigger faster development of heart disease⁴.

The Obesity Health Alliance, a coalition of 40 plus leading health organisations, are calling for stronger restrictions to protect children from junk food marketing to help reduce childhood obesity.

This document sets out a summary of the key evidence to date and discusses the wealth of available evidence, the majority of which supports a causal link between food marketing exposure and children's weight.

How does junk food marketing affect children's health?

Food marketing impacts children's health through a chain of effects⁵.

- Increased awareness and recall of a product or brand⁶
- Purchase of the product or brand or purchase requests from children⁷
- Consumption of advertised products⁸
- General food consumption⁹

¹ Department of Health and Social Care. (2020). *Tackling obesity: empowering adults and children to live healthier lives*. Retrieved from <https://www.gov.uk/government/publications/tackling-obesity-government-strategy/tackling-obesity-empowering-adults-and-children-to-live-healthier-lives>

² Simmonds, M., Llewellyn, A., Owen, C. G., & Woolacott, N. (2016). Predicting adult obesity from childhood obesity: a systematic review and meta-analysis. *Obesity reviews*, 17(2), 95-107.

³ Biro, F. M., & Wien, M. (2010). Childhood obesity and adult morbidities. *The American journal of clinical nutrition*, 91(5), 1499S-1505S

⁴ Daniels, S. R. (2006). The consequences of childhood overweight and obesity. *The future of children*, 16(1), 47-67

⁵ Kelly, B., King, M.P., Chapman, M.N.D., Boyland, E., Bauman, A. E., & Baur, L. A. (2015). A hierarchy of unhealthy food promotion effects: identifying methodological approaches and knowledge gaps. *American Journal of Public Health*, 105(4), e86-e95.

⁶ Norman, J., Kelly, B., McMahon, A. T., Boyland, E., Chapman, K., & King, L. (2020). Remember Me? Exposure to Unfamiliar Food Brands in Television Advertising and Online Advergaming Drives Children's Brand Recognition, Attitudes, and Desire to Eat Foods: A Secondary Analysis from a Crossover Experimental-Control Study with Randomization at the Group Level. *Journal of the Academy of Nutrition and Dietetics*, 120(1), 120-129.

⁷ Ng, S. H., Kelly, B., Se, C. H., Sahathevan, S., Chinna, K., Ismail, M. N., & Karupaiah, T. (2015). Reading the mind of children in response to food advertising: a cross-sectional study of Malaysian schoolchildren's attitudes towards food and beverages advertising on television. *BMC public health*, 15(1), 1-14.

⁸ Andreyeva, T., Kelly, I. R., & Harris, J. L. (2011). Exposure to food advertising on television: associations with children's fast food and soft drink consumption and obesity. *Economics & Human Biology*, 9(3), 221-233. Doi: <https://doi.org/10.1016/j.ehb.2011.02.004>

⁹ Boyland, E. J., Nolan, S., Kelly, B., Tudur-Smith, C., Jones, A., Halford, J. C., & Robinson, E. (2016). Advertising as a cue to consume: a systematic review and meta-analysis of the effects of acute exposure to unhealthy food and nonalcoholic beverage advertising on intake in children and adults, 2. *The American journal of clinical nutrition*, 103(2), 519-533. Doi: <https://doi.org/10.3945/ajcn.115.120022>

- Following increased food consumption, no subsequent reduction in food intake to compensate¹⁰

These effects are constant over time, with weight gain occurring as a result of increased food consumption and no subsequent reduction in food intake as a form of compensation. This is particularly problematic in children, considering it can take as little as 46-72 additional kcals a day to gain weight over time¹¹.

Furthermore, the majority of research shows that those from ethnic minorities or lower socioeconomic backgrounds are disproportionately exposed to unhealthy food advertising, particularly on television and outdoors¹².

Evidence that junk food marketing is a problem

There is a wealth of evidence that has been conducted over time, drawing consistent conclusions that marketing impacts children's dietary health through a multitude of means.

Television

- Globally, children are exposed to excessive unhealthy food and drink advertising on television¹³. Much of this advertising occurs during family viewing time, when the number of children watching television is highest¹⁴. Therefore, the current restrictions are not enough to protect children from unhealthy food marketing on television, which is why the government has committed to bringing in a 9pm watershed on junk food adverts.
- Commercial TV exposure is linked to BMI – this relationship can be explained by increased children's purchase requests and consumption in response to exposure to advertising¹⁵.
- The criteria for a causal link between TV marketing and obesity has been met. This means that the available research provides compelling evidence of a cause and effect relationship between food marketing on TV and obesity¹⁶.
- Exposure to advertising for food delivery services, digital advertising and advertising in recreational environments is associated with increased odds of obesity in adults¹⁷.

¹⁰ Norman, J., Kelly, B., McMahon, A. T., Boyland, E., Baur, L. A., Chapman, K., ... & Bauman, A. (2018). Sustained impact of energy-dense TV and online food advertising on children's dietary intake: a within-subject, randomised, crossover, counter-balanced trial. *international journal of behavioral nutrition and physical activity*, 15(1), 37.

¹¹ Plachta-Danielzik, S., Landsberg, B., Boky-Westphal, A., Johannsen, M., Lange, D., & Müller, M. J. (2008). Energy gain and energy gap in normal-weight children: Longitudinal data of the KOPS. *Obesity*, 16(4), 777-783.

¹² Backholer, K., Gupta, A., Zorbas, C., Bennett, R., Huse, O., Chung, A., ... & Peeters, A. (2021). Differential exposure to, and potential impact of, unhealthy advertising to children by socio-economic and ethnic groups: A systematic review of the evidence. *Obesity Reviews*, 22(3), e13144.

¹³ Kelly, B., Vandevijvere, S., Ng, S., Adams, J., Allemandi, L., Bahena-Espina, L., ... & Swinburn, B. (2019). Global benchmarking of children's exposure to television advertising of unhealthy foods and beverages across 22 countries. *Obesity Reviews*, 20, 116-128.

¹⁴ Obesity Health Alliance. (2017). A 'watershed' moment. Retrieved from <http://obesityhealthalliance.org.uk/wp-content/uploads/2017/11/A-Watershed-Moment-report.pdf>

¹⁵ Boyland, E., Muc, M., Kelly, B., Halford, J. C., Vohra, J., Rosenberg, G., & Christiansen, P. (2021). Indirect associations between commercial television exposure and child body mass index. *Journal of Nutrition Education and Behavior*, 53(1), 20-27.

¹⁶ Norman, J., Kelly, B., Boyland, E., & McMahon, A. T. (2016). The impact of marketing and advertising on food behaviours: evaluating the evidence for a causal relationship. *Current Nutrition Reports*, 5(3), 139-149.

¹⁷ Yau, A., Adams, J., Boyland, E. J., Burgoine, T., Cornelsen, L., De Vocht, F., ... & Cummins, S. (2021). Sociodemographic differences in self-reported exposure to high fat, salt and sugar food and drink advertising: a cross-sectional analysis of 2019 UK panel data. *BMJ open*, 11(4), e048139.

- Food marketing influence is exacerbated by the powerful creative techniques utilised by brands to appeal to children¹⁸ which succeed through increasing brand preferences¹⁹.

Digital advertising

This form of advertising has been documented less than television due to ethical challenges in data collection²⁰. However from the growing body of existing evidence, it is clear that:

- Digital marketing increases the memorability and likeability of brands in children, as a result of more emotional, entertaining experiences²¹.
- Influencer adverts, such as those on YouTube, are found to affect snack intake in children on a similar scale to TV ads.
 - One study tested the effectiveness of an advertising disclosure (when an influencer clearly states they are advertising a product), and found advertising awareness increased in children, however so did snack intake²².
- Marketing of healthy foods by influencers has been found to have no impact on intake²³.
- Advergames/digital games influence children's food intake^{24,25}.
- Children were more likely to rate brands as "cool" if they played an advergame promoting the brand compared to those who viewed an advert on TV for the same brand²⁶.
- When comparing healthy and unhealthy social media posts, adolescents were more likely to share unhealthy posts, rated peers more positively when they had unhealthy posts in their feed, recalled more unhealthy food brands, and viewed unhealthy advertising posts for longer²⁷.

¹⁸ Boyland, E. J., Harrold, J. A., Kirkham, T. C., & Halford, J. C. (2012). Persuasive techniques used in television advertisements to market foods to UK children. *Appetite*, 58(2), 658-664.

¹⁹ McGale, L. S., Halford, J. C. G., Harrold, J. A., & Boyland, E. J. (2016). The influence of brand equity characters on children's food preferences and choices. *The Journal of pediatrics*, 177, 33-38.

²⁰ Tatlow-Golden, M., Verdoodt, V., Oates, J., Jewell, J., Breda, J. J., Boyland, E., & World Health Organization. (2017). A safe glimpse within the "black box"? ethical and legal principles when assessing digital marketing of food and drink to children. *Public health panorama*, 3(04), 613-621.

²¹ World Health Organization. (2016). *Tackling food marketing to children in a digital world: trans-disciplinary perspectives*. Retrieved from https://www.euro.who.int/_data/assets/pdf_file/0017/322226/Tackling-food-marketing-children-digital-world-trans-disciplinary-perspectives-en.pdf

²² Coates, A. E., Hardman, C. A., Halford, J. C. G., Christiansen, P., & Boyland, E. J. (2019). The effect of influencer marketing of food and a "protective" advertising disclosure on children's food intake. *Pediatric obesity*, 14(10), e12540.

²³ Coates, A. E., Hardman, C. A., Halford, J. C., Christiansen, P., & Boyland, E. J. (2019). Social media influencer marketing and children's food intake: a randomized trial. *Pediatrics*, 143(4).

²⁴ Harris, J. L., Speers, S. E., Schwartz, M. B., & Brownell, K. D. (2012). US food company branded advergames on the Internet: children's exposure and effects on snack consumption. *Journal of children and media*, 6(1), 51-68.

²⁵ Folkvord, F., Anschütz, D. J., Buijzen, M., & Valkenburg, P. M. (2013). The effect of playing advergames that promote energy-dense snacks or fruit on actual food intake among children. *The American journal of clinical nutrition*, 97(2), 239-245.

²⁶ Norman, J., Kelly, B., McMahon, A. T., Boyland, E., Chapman, K., & King, L. (2020). Remember Me? Exposure to Unfamiliar Food Brands in Television Advertising and Online Advergames Drives Children's Brand Recognition, Attitudes, and Desire to Eat Foods: A Secondary Analysis of a Crossover Experimental-Control Study with Randomization at the Group Level. *Journal of the Academy of Nutrition and Dietetics*, 120(1), 120-129.

²⁷ Murphy, G., Corcoran, C., Tatlow-Golden, M., Boyland, E., & Rooney, B. (2020). See, like, share, remember: Adolescents' responses to unhealthy-, healthy-and non-food advertising in social media. *International journal of environmental research and public health*, 17(7), 2181.

Potential impact of a junk food advertising ban.

Exposure to 4.4 minutes of food advertising on TV was found to on average increase a child's food consumption by 60kcal, whilst playing an online advergaming with food cues for five minutes would increase average consumption by 53.4kcal²⁸.

A UK modelling study estimated that if all advertising for foods high in fat, sugar and salt before 9pm was withdrawn, the number of children with obesity in the UK would be reduced by 4.6% (equivalent to 40,000 children)²⁹.

There is no direct research that we know of examining the impact of an online junk food advertising ban, however a study of alcohol advertising conducted in the US found that individuals were 8% less likely to say they would purchase an alcoholic beverage if they resided in states with an alcohol advertising ban. However for consumers exposed to online advertising, this gap narrowed to 3%³⁰. This suggests that without online restrictions, any effectiveness of other marketing restrictions is likely to be undermined.

For any enquiries relating to this briefing, please contact: Caroline Cerny, Obesity Health Alliance, Caroline.Cerny@ukhealthforum.org.uk or Amy Finlay, a.finlay@liverpool.ac.uk

²⁸ Russell, S. J., Croker, H., & Viner, R. M. (2019). The effect of screen advertising on children's dietary intake: A systematic review and meta-analysis. *Obesity reviews*, 20(4), 554-568.

²⁹ Mytton, O. T., Boyland, E., Adams, J., Collins, B., O'Connell, M., Russell, S. J., ... & Cobiac, L. J. (2020). The potential health impact of restricting less-healthy food and beverage advertising on UK television between 05.30 and 21.00 hours: A modelling study. *PLoS medicine*, 17(10), e1003212.

³⁰ Goldfarb, A., & Tucker, C. (2011). Advertising bans and the substitutability of online and offline advertising. *Journal of Marketing Research*, 48(2), 207-227.