World Health Organization

WHO guideline on policies to protect children from the harmful impact of food marketing

DRAFT WHO GUIDELINE FOR PUBLIC CONSULTATION

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Contents

Acknowledgements

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Abbreviations and acronyms

BMI	body mass index
CI	confidence interval
eLENA	e-Library of Evidence for Nutrition Actions
GINA	Global database on the Implementation of Nutrition Action
GRADE	Grading of Recommendations Assessment, Development and Evaluation
HIC	high-income country
LMIC	low- and middle-income country
NCD	noncommunicable disease
NUGAG	Nutrition Guidance Expert Advisory Group
PICO	population, intervention, comparator and outcome
RCT	randomized controlled trial
SES	socioeconomic status
UN	United Nations
UNGA	United Nations General Assembly
WHO	World Health Organization

Glossary

Exposure: Exposure to marketing is influenced by the communication channels, times and settings in which children see marketing. Exposure includes the reach and frequency of a particular message. Reach is the percentage of people in a target market who are exposed to the campaign over a specified period. Frequency is a measure of how many times the average person is exposed to a message *(1)*.

Food: Includes foods and non-alcoholic beverages. Foods to be restricted from marketing are those that, according to the WHO region-specific nutrient profile models *(3–8)*, belong to a food category with nutrient thresholds and exceed these thresholds, or belong to a food category for which all marketing is prohibited (for which no nutrient thresholds are established). Such foods are typically high in fats, sugars and/or salt, and are usually processed.

Food choice: The term "food choice" is used in this guideline to describe one of the outcomes of interest of the research questions that the guideline addresses. Food choice refers to the selection of one food over another (or others) from a given selection of foods and hence is limited by the foods available.

Impact of marketing: The impact of marketing is a function of exposure and power.

Marketing: Any form of commercial communication or message that acts to advertise or otherwise promote a product, its related brand or service, and is designed to increase, or has the effect of increasing, the recognition, appeal and/or consumption of particular products and services *(1, 2)*.

Policies: Policies, in the context of this guideline, are defined as mandatory, legally enforceable measures (including statutory approaches, regulations, legislation or orders used by a jurisdiction's legal system) and voluntary measures (including self-regulatory measures, pledges or codes). They do not include action plans, strategies, programmes or initiatives.

Power: The power of marketing is influenced by the content of the message, especially the creative strategies used. These strategies include graphics and visual design, such as cartoons and brand equity characters; humour, fun and fantasy; movie and sports celebrities; and competitions and entertainment events *(1)*.

Executive summary

Introduction

Good nutrition and a healthy diet are fundamental for health and well-being throughout life. Unhealthy diets are a leading global public health risk, contributing to all forms of malnutrition and to the current rise in noncommunicable diseases (NCDs) *(9)*. Globally, 38.3 million children under the age of 5 years are estimated to be overweight, while 47 million have wasting, and 144 million are stunted *(10)*. The prevalence of overweight and obesity has increased dramatically among children and adolescents (aged 5–19 years); 337 million people in this age group are estimated to be overweight or obese *(11)*.

Governments play a leading role in promoting healthy diets, addressing malnutrition in all its forms and reducing the burden of diet-related NCDs. They can take action through public policies to create a health-promoting food environment that is conducive to a healthy diet and facilitates healthy dietary decisions *(12–14)*.

Food marketing is a key characteristic of the food environment, and its impact on children has long been recognized. Unregulated commercial activity, including food marketing, has been described as a threat to the health and future of children in every country *(15)*. Arguments in defence of marketing fade when the marketed products harm health and when marketing poses a threat to children's rights. A 2009 review commissioned by the World Health Organization (WHO) on the extent, nature and effects of food promotion to children found that food marketing[1] has an impact on nutrition knowledge, food preferences and consumption patterns, and that the foods that are promoted represent a "very undesirable dietary profile, with heavy emphasis on energy dense, high fat, high salt and high sugar foods" *(16)*. The review provided evidence for resolution WHA63.14, on the marketing of foods and non-alcoholic beverages to children, which was unanimously endorsed by the Sixty-third World Health Assembly in 2010. The resolution endorsed the WHO set of recommendations on the marketing of foods and non-alcoholic beverages to children *(1)* and urged Member States to take the necessary measures to implement the set of recommendations, including to identify the most suitable policy approach given national circumstances.

Since the set of recommendations were endorsed in 2010, the evidence base on the extent, nature and impact of food marketing on children has grown *(17–21)*. Governments have also continued to make commitments to restrict food marketing – for example, at the 2014 Second International

[1] In this review, food marketing includes marketing of both foods and non-alcoholic beverages.

Conference on Nutrition through the conference's Rome Declaration on Nutrition *(22)* and Framework for Action *(12)*, which were subsequently endorsed by the Sixty-eighth World Health Assembly.

Unfortunately, despite the growing evidence base and government commitments, little progress has been made to protect all children from the harmful impact of food marketing. As of May 2022, only 60[2] countries have adopted policies that restrict marketing of food and non-alcoholic beverages to children. Of these, only one third (20 countries) have mandatory policies. Additionally, in the second global nutrition policy review, undertaken in 2016–2017, relatively few countries reported using nutrient profile models to define the foods covered by policies or reported having marketing restrictions that covered social media *(23)*. Some policies also covered children only up to the age of 12.

In response to Member State requests, and to strengthen and streamline support for Member States in developing and implementing new, or strengthening existing, public policies to protect children from the harmful impact of food marketing, WHO began the process of developing this guideline, taking new evidence into consideration.

The WHO Department of Nutrition and Food Safety established the WHO Nutrition Guidance Expert Advisory Group (NUGAG) Subgroup on Policy Actions to support the work of WHO in developing evidence-informed guidelines on food environment policies related to food marketing, taxes and subsidies *(24)*, nutrition labelling *(25)*, and the school food environment *(26)*. This WHO guideline focuses on policies to protect children from the harmful impact of food marketing. It builds on the 2010 WHO set of recommendations on the marketing of foods and non-alcoholic beverages to children *(1)*, reflecting the broadened evidence base. This guideline is in line with other WHO guidance on promoting healthy diets, including guidelines on dietary goals relating to sodium *(27)* and sugars *(28)*; forthcoming guidelines on total fat, saturated fatty acids and *trans*-fatty acids, polyunsaturated fatty acids, carbohydrates, use of non-sugar sweeteners and use of low-sodium salt substitutes; and the recommendations of the WHO Commission on Ending Childhood Obesity *(29)*.

Objectives

The objectives of this guideline are to:

- guide Member States in the development and implementation of evidence-informed policies to protect all children from the harmful impact of food marketing;

[2] This number was collated by WHO from the WHO Global database on the Implementation of Nutrition Action (GINA) and the WHO Noncommunicable Disease Document Repository.

- enable evidence-informed advocacy to advance policy action to restrict food marketing practices;
- guide future research to further strengthen the evidence base for policy action to restrict food marketing; and
- enable the development of healthy dietary practices among children.

The recommendations in this guideline can be used by policy-makers, food regulators and other actors to develop and implement new, or strengthen existing, public policies to protect children from the harmful impact of food marketing, improve the health and nutritional status of all people, and ultimately reduce the burden of diet-related NCDs to accelerate achievement of the United Nations Sustainable Development Goals.

Methods

This guideline was developed by the WHO Department of Nutrition and Food Safety using the procedures outlined in the *WHO handbook for guideline development (30)*. An internal steering committee provided initial input to the guideline development process. An international multidisciplinary guideline development group, the NUGAG Subgroup on Policy Actions, was convened with the main functions of determining the scope and key questions of the guideline (informed by a scoping review), reviewing the evidence and formulating evidence-informed recommendations.

The NUGAG Subgroup on Policy Actions determined the following key questions of the guideline through discussion and consensus.

- What is the effect on the outcomes of interest[3] of exposure of children[4] to food marketing, compared with no marketing?
- What is the effect on the outcomes of interest[5] of implementing a policy that aims to restrict children's exposure to food marketing and its persuasive power, compared with not implementing a policy? [6]

[3] Critical outcomes: food preferences, food choice or intended choice, food purchasing/sales or intended purchasing, dietary intake. Important outcomes: product requests or intended requests, dental caries/erosion, body weight/body mass index (BMI)/obesity, diet-related NCDs (or validated surrogate indicators).
[4] Children were defined as people aged 0–19 years. For the food purchasing/sales or intended purchasing outcome, parents or other adults making food purchases on behalf of children (aged 0–19 years) were also included.
[5] The outcomes in note 3, with the addition to critical outcomes of exposure to marketing and power of marketing.
[6] Policies were defined as mandatory, legally enforceable measures (including statutory approaches, regulations, legislation or orders used by a jurisdiction's legal system) and voluntary measures (including self-regulatory measures, pledges or codes). They do not include action plans, strategies, programmes or initiatives. Policy implementation was compared with either not implementing a policy or implementing a "weaker" policy.

Evidence relating to these questions was retrieved through two systematic reviews, one on the impact of food marketing on children *(31)* and the other on the effect of policies to restrict food marketing to children *(32)*. Grading of Recommendations Assessment, Development and Evaluation (GRADE)[7] methodology was used to assess the level of certainty[8] in the evidence identified. In addition to the two systematic reviews, a narrative review on exposure to, and power of, food marketing, and their associations with food-related attitudes, beliefs and behaviours *(33)*, and a review of contextual factors (values, resource implications, equity and human rights, acceptability, and feasibility) *(34)* were also prepared to support development of the guideline. The systematic review on the impact of food marketing on children and the narrative review were undertaken to update the 2009 review on the extent, nature and effects of food promotion to children *(16)*, which informed resolution WHA63.14.

The NUGAG Subgroup on Policy Actions discussed and assessed the certainty of the evidence, drafted recommendations and reached consensus on the strength of the recommendations. It took into consideration the desirable and undesirable effects of the recommendations, the certainty of the available evidence, values related to the health outcomes of the recommendations, the potential impact on equity and human rights, resource implications of adopting the recommendations, and the feasibility and acceptability of implementing the recommendations in different settings and to relevant actors.

All members of the NUGAG Subgroup on Policy Actions, members of the systematic review team, external resource people participating in guideline development meetings and reviewers of the draft guideline (including peer reviewers and those providing comments through the public consultation) completed declaration of interest forms. The forms were reviewed by the WHO Secretariat, in consultation with the WHO Office of Compliance, Risk Management and Ethics. The procedures for management of interests outlined in the *Guidelines for declaration of interests (WHO experts) (35)* were strictly followed.

The evidence

The narrative review examining the literature on food marketing exposure and power, and their associations with food-related attitudes, beliefs and behaviours found that children continue to be exposed to powerful food marketing *(33)*. Evidence from 143 content analysis studies and 36 consumer research studies published from 2009 onwards and conducted mainly in high-income

[7] http://www.gradeworkinggroup.org/

[8] Alternatively called "quality of evidence", the level of certainty in the evidence indicates the level of confidence that the effects of an intervention as observed in a body of evidence (i.e. set of scientific studies) reflect the true effects that would occur in real-world settings.

countries (HICs) was synthesized in the narrative review. Studies repeatedly showed that food marketing was prevalent in settings where children gather (e.g. schools, sports clubs), during children's typical television viewing times or on children's television channels, on digital spaces popular with young people, and in magazines targeting children and adolescents. Food marketing predominantly promoted less healthy options, such as sugar-sweetened beverages, chocolate and confectionery, and fast food. Studies reported that a wide variety of marketing strategies that are likely to appeal to children – including celebrity/sports endorsements, promotional characters, product claims, gifts/incentives, tie-ins, competitions and games – were used in food marketing, and that these were used more often in the marketing of less healthy food options than healthier ones. The vast majority of studies showed associations between food marketing and public health harms (as defined through a number of outcomes, such as food-related beliefs, attitudes and eating behaviours). In multiple studies, parents reported concern about children's exposure to food marketing and support for regulation of such marketing.

The systematic review on the impact of food marketing on children included evidence from 96 studies: 64 randomized controlled trials (RCTs) and 32 nonrandomized studies *(31)*. Since the 2009 review *(16)*, evidence has emerged on the impact of exposure via other channels (e.g. digital, packaging), in addition to television. Moderate certainty evidence from RCTs showed that exposure to food marketing significantly impacts children's food choice[9] or intended choice (odds ratio = 1.97; 95% confidence interval (CI): 1.46–2.66), product requests or intended requests (no pooled analysis possible; combination of *P* values significant in all model iterations; $P < 0.001$), and dietary intake (standardized mean difference = 0.20; 95% CI: 0.10–0.30). Subgroup analyses for food choice or intended choice and dietary intake showed that these findings applied across different marketing channels (e.g. television, digital, packaging), with no significant differences in effect by marketing channel. There was very low certainty evidence from RCTs reporting a significant impact of exposure to food marketing on children's food preferences (standardized mean difference = 0.38; 95% CI: 0.03–0.72). Very low certainty observational evidence supported evidence from RCTs on the impact of exposure to food marketing on children's food preferences, food choice or intended choice, product requests or intended requests, and dietary intake. Additional observational studies were identified for food purchasing/sales or intended purchasing (for which three of four studies reported an effect), dental caries/erosion (for which one study reported no effect and another a higher dental caries prevalence), and body weight/body mass index (BMI)/obesity (for which one study reported no

[9] The term "food choice" is used in this guideline to describe one of the outcomes of interest. Food choice refers to selection of one food over another (or others) from a given selection of foods and hence is limited by the foods available.

effect). No relevant studies were identified on the impact of exposure to food marketing on diet-related NCDs (or validated surrogate indicators).

The systematic review on the effect of policies to restrict food marketing to children found evidence from 44 studies (all observational) *(32)*. The evidence base for the effect of policies is far more limited and uncertain than that for the impact of food marketing on children; this is likely to reflect the complexity of the intervention, and weaknesses in policy and study designs. Inconsistency in the effect of policies may in part be due to methodological differences between the included studies (e.g. in study design, sampling approach and effect measures). Overall, there was low certainty evidence on the effect of policies to restrict food marketing to children on children's food purchasing (four of five studies reported an effect clearly favouring the intervention) and unintended consequences (three studies reported that policies may result in unintended consequences that are favourable to public health). There was very low certainty evidence on the effect of policies on children's exposure to food marketing (15 of 37 studies reported an effect clearly or potentially favouring the intervention) and the power of food marketing (five of 18 studies reported an effect clearly or potentially favouring the intervention), as well as on children's dietary intake (one study reported an effect clearly favouring the intervention) and product change (one study reported an effect clearly favouring the control, and one reported no effect). Pooled analysis was not possible for any of the outcomes of interest, because of heterogeneity in effect measures and a lack of data required to calculate effect sizes. The included studies varied greatly in their policy design – that is, the regulatory instrument used, definition of the target group, and the approach to determining foods restricted from marketing. Subgroup analyses were conducted to further explore which policy design elements may be more effective. Studies evaluating mandatory policies, policies designed to restrict marketing to children that included children older than 12 years, and policies using a nutrient profile model to classify the foods for which marketing was to be restricted were more likely to report effects on exposure to food marketing that were favourable to public health. Studies evaluating mandatory policies and policies designed to restrict marketing to children (including children older than 12 years) were also more likely to report effects on power of food marketing that were favourable to public health. Studies evaluating voluntary measures were more likely to show effects on exposure to, and power of, food marketing that were unfavourable to public health than effects that were favourable; this was not the case for studies evaluating mandatory policies. No relevant studies were identified on the effect of policies to restrict food marketing to children on food preferences, food choice, product requests, dental caries/erosion, body weight/BMI/obesity and diet-related NCDs (or validated surrogate indicators).

The review of contextual factors provided contextual information relevant for policies to protect children from the harmful impact of food marketing – that is, factors relating to values, resource implications, equity and human rights, acceptability, and feasibility *(34)*. A total of 244 publications were included in the review. Modelling studies included in the review indicated that policies to protect children from the harmful impact of food marketing would be cost-effective over the long term (generally after 50 years). The expected costs, health gains, healthcare cost savings and cost-effectiveness of such policies differ depending on country context, and the design and regulatory nature of policies. Regarding human rights, policies to protect children from the harmful impact of food marketing appear to be in accordance with human rights standards, whereas unregulated food marketing may jeopardize the fulfilment of the Convention on the Rights of the Child, including in relation to Article 24 (the right to health) and Article 17 (protection from material injurious to well-being). Studies included in the review show that, in HICs, children of lower socioeconomic status (SES) are more exposed to food marketing than children of higher SES, which can lead to, or worsen, health inequities. As a result, policies to protect children from the harmful impact of food marketing can be expected to reduce health inequities. Evidence identified mainly from HICs indicates that policies to protect children from the harmful impact of food marketing are largely acceptable to the public, but that industry has generally opposed government-led restrictions. The existence of such policies, or national action plans that recommend implementation of such policies, indicates acceptability to government and policy-makers, and points to their feasibility.

Good-practice statement and recommendations

Good-practice statement

Children should be protected from the harmful impact of food marketing.[10]

Rationale

- Food marketing continues to be prevalent, including on packaging and in settings where children gather (e.g. schools, sports clubs), during children's viewing times and on children's channels, in youth magazines, and on social media, and uses many techniques appealing to or resonating with young audiences *(33)*.
- Digital food marketing facilitates engagement, which can amplify the marketing message and the overall impact of marketing *(33)*.
- Food marketing is mostly for foods that are inconsistent with healthy diets *(33)*. Across studies, the most frequently marketed food categories were "fast food", sugar-sweetened beverages, chocolate and confectionery, salty/savoury snacks, sweet bakery items and snacks, breakfast cereals and desserts *(31)*.
- Food marketing has a harmful impact on children's food choice[11] and their dietary intake (moderate certainty of evidence) *(31)*.
- Food marketing affects children's purchase requests to adults for marketed foods (moderate certainty of evidence) *(31)*, and influences the development of children's norms about food consumption *(33)*.
- Enabling children to achieve their full developmental potential is a human right and a critical foundation for sustainable development.
- Countries that have ratified the Convention on the Rights of the Child have a legal obligation to realize children's right to the highest attainable standard of health. According to the Convention "In all actions concerning children, whether undertaken by public or private social welfare institutions … the best interests of the child shall be a primary consideration".[12]

[10] "Marketing" refers to any form of commercial communication or message that acts to advertise or otherwise promote a product, its related brand or a service, and is designed to increase, or has the effect of increasing, the recognition, appeal and/or consumption of particular products and services *(1, 2)*. "Food" includes both foods and non-alcoholic beverages. "Harmful impact" refers to an undesirable impact on dietary behaviours that are inconsistent with guidance on healthy diets.

[11] The term "food choice" is used in this guideline to describe one of the outcomes of interest. Food choice refers to selection of one food over another (or others) from a given selection of foods and hence is limited by the foods available.

[12] Article 3.1, Convention on the Rights of the Child, 1989 (https://www.ohchr.org/en/professionalinterest/pages/crc.aspx)

- Furthermore, countries that have ratified the Convention on the Rights of the Child should ensure that marketing does not have adverse impacts on children's rights by adopting appropriate regulation [13] and should "make the best interests of the child a primary consideration when regulating advertising and marketing addressed to and accessible to children".[14]

Recommendations

Recommendation 1

WHO suggests implementation of policies to restrict food marketing to which children are exposed.

Conditional recommendation,[15] *very low certainty evidence*

Recommendation 2

To maximize effectiveness of food marketing restrictions, WHO suggests that policies:

- be mandatory;
- protect children of all ages, including those older than 12 years;
- use a nutrient profile model to classify foods to be restricted from marketing;
- be broad enough to minimize the risk of migration of marketing to other channels, to other spaces within the same channel or to other age groups; and
- restrict the power of food marketing to persuade.

Conditional recommendation, very low certainty evidence

Remarks

- Regarding policy design elements, evidence indicates that voluntary measures are more likely to show undesirable effects than desirable effects for exposure to, and power of, marketing *(32)*.
- Most policies currently restrict marketing to young children and define a child as less than 12 years of age. However, evidence indicates that policies designed to restrict food marketing to children that included children older than 12 years were more likely to report desirable effects *(32)*.

[13] General comment No. 16 (2013) on State obligations regarding the impact of the business sector on children's rights, United Nations Committee on the Rights of the Child; 2013.
[14] General comment No. 25 (2021) on children's rights in relation to the digital environment. United Nations Committee on the Rights of the Child; 2021.
[15] The recommendation is conditional because the guideline development group was less certain about the desirable effects of implementing the intervention, as these depend on policy design elements and contextual factors. However, no undesirable effects of restricting food marketing were identified.

- Policies using a nutrient profile model to classify restricted foods were more likely to show desirable effects than policies that use company-specific nutritional criteria or category-specific uniform nutritional criteria *(32)*.
- Given that the impact of marketing is a function of both exposure to marketing and power of marketing, policies should address children's exposure to food marketing, irrespective of timing, venue or intended audience *(1)*, and should therefore go beyond children's media *(31, 33)*.
- The power of food marketing to persuade relates to techniques appealing to and resonating with children, including promotional characters and celebrity endorsements; these techniques impact dietary intake *(31)*.

Implementation considerations

The causes of malnutrition are complex, and no single intervention will reduce malnutrition in all its forms. Policies to protect children from the harmful impact of food marketing are best implemented as part of a comprehensive policy approach to create enabling and supportive food environments. The recommendations in this guideline should be considered alongside other relevant WHO guidelines and recommendations, including forthcoming WHO guidelines on school food and nutrition policies, nutrition labelling policies, and fiscal policies *(24–26)*. The implementation considerations discussed in this guideline are not exhaustive. There are numerous additional global and regional implementation resources on policies to protect children from the harmful impact of food marketing that may serve as a useful reference to support implementation of the recommendations in this guideline.

The recommendations may require adaptation to the local context of WHO regions and Member States, including the country's nutritional situation, cultural context, locally available foods, dietary customs, available resources and capacities, and existing policies and governance structures.

To ensure policy effectiveness, consideration should be given to policy design elements, in line with those presented in this guideline's recommendation 2. These policy design elements involve using a mandatory approach protecting children of all ages (including those older than 12 years), defining the foods for which marketing is to be restricted using a nutrient profile model, and ensuring that policies are as broad as possible in their coverage of marketing channels.

Marketing that originates from sources outside a national jurisdiction may not be covered by national policies *(2)*. Action to reduce children's exposure to cross-border marketing, and thereby its impact, is necessary, not least because of the borderless reach of digital media *(36–41)*.

The promotion of brands (as distinct from products and services) deserves greater attention and research. Such promotion should be restricted, given that marketing of less healthy foods is often focused on building familiarity and brand loyalty, rather than promoting specific foods *(42)*.

Mechanisms to allow continuous monitoring and enforcement, and sanctions that are sufficiently meaningful to deter noncompliance, may also improve the effectiveness of policies *(34)*. To support monitoring and evaluation, policies may consider inclusion of provisions to make industry data available for this purpose.

Before policies are implemented, resource requirements should be assessed. As with other interventions targeting children, policies may take considerable time to have an impact on population health gains *(34)*. Long-term political commitment to policies, including resource allocation for continued monitoring and enforcement, is therefore needed.

Acceptability to industry of government-led policies to protect children from the harmful impact of food marketing was found to be low, and preparing for potential opposition to such policies may increase their strength and effectiveness *(34)*. The experiences of countries that have successfully implemented policies can provide guidance for overcoming such opposition *(41)*. Overall, experience suggests that policies to protect children from the harmful impact of food marketing are a viable option. Given the potential complexity of marketing and regulatory landscapes, a situation analysis of both is a useful tool for policy development *(2)*. For example, reviewing existing laws and policies can help to identify potential legal entry points.

Research gaps

Based on the evidence considered in the guideline development process, several research gaps and considerations were identified, which will play an important role when updating the guideline, and in further advocacy and action to protect all children from the harmful impact of food marketing. Gaps refer to both research on the impact of marketing and the effectiveness of policies. They reflect understudied thematic areas and geographic locations, as well as methodological issues.

Overall, the evidence on the *impact of marketing* on children has increased in the past decade since the development of the WHO set of recommendations on marketing of foods and non-alcoholic beverages to children in 2010. Although evidence is increasingly available from low- and middle-income countries, it remains skewed towards HICs.

Limited research is available on the sustained effects of food marketing on dietary intake, and from longitudinal studies that consider the impact of food marketing on long-term outcomes (e.g. dental caries, obesity, diet-related NCDs). Little is known about the impact of food marketing via marketing channels other than television (e.g. outdoor advertising, digital marketing, sponsorship), the impact of the combined effect of different types of marketing and the impact of marketing of brands (as distinct from products and services).

The body of evidence on policy *effectiveness* is limited. This is partly due to the small amount of progress that has been made in implementing policies to protect children from the harmful impact of food marketing. Only a few of the implemented policies have been evaluated. The certainty of evidence could be strengthened by using standardized monitoring procedures to reduce inconsistency in effects, which is currently due to differences in study design, sampling approach and effect measure. Studies on the effect of policies on health outcomes would be valuable, as would studies that monitor the potential migration of food marketing to other marketing channels and comparative studies that include multiple countries.

In general, disaggregation of data by characteristics such as SES, gender and geographical location is critical. This would enable analysis of the impact on health equity of food marketing and of policies to protect children from its harmful impact.

Research has assessed the extent of, and processes for, implementation of food environment policies using a diverse array of tools *(43)*, but overall guidance on appropriate study designs and methods for policy evaluation remains limited. Results from research projects that are underway can be used to strengthen policy evaluations *(44)*.

1 Introduction

1.1 Background

Good nutrition is key to ensuring optimal growth, health and well-being during childhood and beyond *(45–48)*. Healthy dietary practices – the foundation for good nutrition – are initiated early in life. Their impact on healthy growth during childhood is seen in rapid growth spurts. They also have long-term health impacts, including preventing noncommunicable diseases (NCDs) later in life. As well, they have an intergenerational impact through ensuring that mothers, particularly those who are adolescent girls, have an optimal nutritional status *(45, 49, 50)*.

Unhealthy diets are a leading global public health risk, contributing to a rise in unhealthy weight gain and NCDs, including diabetes, heart disease, stroke and cancer *(9)*. NCDs now account for about 70% of all deaths globally *(51)*. The dietary risks cluster[16] results in nearly 8 million deaths from NCDs per year. It is responsible for 11.61% of all disability-adjusted life years (DALYs) lost to NCDs and 7.41% of DALYs lost to all causes worldwide *(52)*. Overweight and obesity in childhood is one of the most prominent global public health challenges today. Virtually no progress has been made in reducing the spread of overweight in more than 15 years *(10)*. Globally, 38.3 million children under the age of 5 years are estimated to be overweight, and 36% of these children live in low- and middle-income countries (LMICs) *(10)*. These numbers escalate by an order of magnitude in the age group 5–19 years: 337 million children in this age group were estimated to have overweight or obesity in 2016 *(11)*. At the same time, 47 million children under 5 years of age are wasted, and 144 million are stunted *(10)*. The burden of malnutrition (i.e. undernutrition, including micronutrient deficiencies, and overweight) threatens the survival, growth and development of children and adolescents, as well as economies and nations *(53)*.

Every country in the world is affected by one or more forms of malnutrition, and combating malnutrition in all its forms is considered one of the greatest global health challenges *(54, 55)*. The causes of malnutrition are complex, and action is required on many fronts *(56–59)*. There is wide recognition that structural changes (i.e. changes to social, cultural, political and physical environments) are required to promote healthy diets *(60)*. In the absence of these structural changes, behaviour change interventions on their own have had limited success in reducing disease risk factors *(61)*. In line with the work of the World Health Organization (WHO) on creating supportive

[16] The "dietary risks cluster" includes diets that are low in whole grains, fruit, nuts and seeds, vegetables, fibre, legumes, polyunsaturated fatty acids, calcium or milk, and/or are high in sodium, *trans*-fatty acids, processed meat, red meat or sugary drinks (Global Burden of Disease risk factors).

environments for health *(62–64)*, key actions to improve diets include those that focus on the food environment – that is, the surroundings that influence and shape consumers' food behaviours, preferences and values, and prompt consumer decisions *(65)*. The importance of environments in shaping behaviours was recently reinforced by the Director-General of WHO, in mentioning the importance of environments that "support, rather than block, behaviours that improve health" *(66)*.

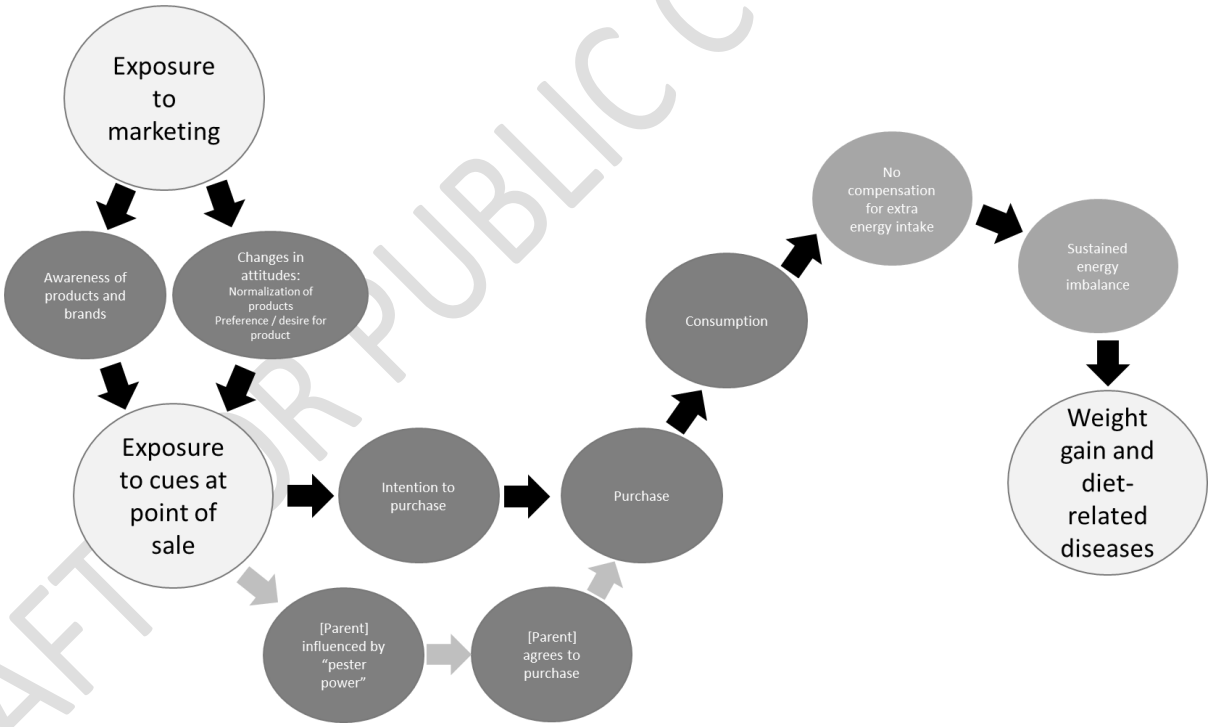
Governments play a leading role in addressing malnutrition in all its forms and reducing the burden of diet-related NCDs, including through public policies that create and protect food environments conducive to healthy diets *(12–14)*. Public policies that create supportive environments to enable people to lead healthy lives have long been considered a central part of government action *(67)*, as most recently reiterated in the Geneva Charter for Well-being *(64)*. They are underpinned by human rights principles, and are characterized by an explicit concern for health and equity, and an accountability for health impact *(67)*. The Global Strategy on Diet, Physical Activity and Health, endorsed at the Fifty-seventh World Health Assembly in May 2004, called on governments to consider policies that facilitate the adoption of a healthy diet, to examine food and agricultural policies for potential health effects on the food supply, and to create an environment – including a food environment – that fosters positive, health-promoting decisions and enables people to lead healthy lives *(68)*. The Second International Conference on Nutrition, held in 2014, similarly emphasized the need to reshape and transform food systems and the food environment, and the responsibility of governments to take action at country level *(12, 22)*. The United Nations General Assembly (UNGA), recognizing the role of nutrition in achieving the 2030 Agenda on Sustainable Development and the Sustainable Development Goals, declared a United Nations (UN) Decade of Action on Nutrition in 2016; one of the proposed key areas for action was building safe and supportive environments for nutrition at all ages. The need for governments "to accept primary responsibility for taking action … to create an enabling environment and to promote equitable coverage of interventions to reduce unhealthy diets" *(14)* was again reinforced by a 2018 report of the WHO Independent High-Level Commission on Noncommunicable Diseases. The 2021 UN Food Systems Summit and the Nutrition for Growth Summit also called for action to transform the food system so that it promotes healthy diets.

The food environment comprises the food supply and how foods are packaged, labelled, marketed and provided or sold. How foods are marketed has long been recognized as shaping and changing consumption norms and affecting value systems *(69, 70)*. Marketing refers to any form of commercial communication or message that advertises or otherwise promotes a product, its related brand or a service. It is designed to, or has the effect of, increasing the recognition, appeal, use and/or consumption of particular products and services *(1, 2)*. Children of all ages are susceptible to marketing

of food *(71, 72)*, which is commonly used for foods that contribute to unhealthy diets. Arguments in defence of marketing fade when the marketed products harm health and when marketing poses a threat to children's rights. Food marketing is pervasive and powerful, appearing in various media channels *(16, 73, 74)*. A 2009 review on the extent, nature and effects of food promotion to children found that food marketing [17] has an impact on nutrition knowledge, food preferences and consumption patterns. The review also found that the food products promoted represent a "very undesirable dietary profile, with heavy emphasis on energy dense, high fat, high salt and high sugar foods" *(16)*. A more recent unpublished scoping review on food marketing undertaken in preparation for development of this guideline *(75)* found considerable evidence that exposure to food marketing affects food preference, food choice and food intake in undesirable ways.

Fig. 1 illustrates the cascade of effects by which exposure to food marketing is likely to ultimately influence children's weight status and likelihood of developing diet-related NCDs *(76)*.

Fig. 1. Cascade of effects of food marketing on behavioural and health outcomes



Source: Adapted from Kelly et al. *(76)*

Recognizing the impact of food marketing on children, numerous global and regional calls to action have been made. As part of implementation of the Global Strategy on Diet, Physical Activity and Health

[17] In the review, food marketing included marketing of both foods and non-alcoholic beverages.

(2004) *(68)*, the World Health Assembly in May 2010 endorsed the WHO set of recommendations on the marketing of foods and non-alcoholic beverages to children (resolution WHA63.14) to reduce the impact on children of marketing of foods high in saturated fats, *trans*-fatty acids, free sugars or salt. In response to WHA63.14, a framework was developed for implementing the WHO set of recommendations *(2)*. Implementing policies to restrict food marketing to children has also been proposed in various other WHO documents adopted by the World Health Assembly, including the Comprehensive Implementation Plan on Maternal, Infant and Young Child Nutrition *(77)* in 2012, and the Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013–2020[18] *(78)* in 2013. In 2016, the report of the WHO Commission on Ending Childhood Obesity similarly recommended implementation of the set of recommendations on the marketing of foods and non-alcoholic beverages to children *(29)*.

Unregulated commercial activity, including powerful food marketing to which children are exposed, has been described as a threat to the health and future of children in every country *(15)*. However, progress to protect children from such marketing remains limited.

1.2 Scope and purpose

Despite growing evidence of the harmful impact of food marketing on children, and numerous calls to action for policies to protect children from these harms, as of May 2022, only 60[19] countries have adopted policies that restrict marketing of food and non-alcoholic beverages to children. Of these, only one third (20 countries) have mandatory policies. Additionally, in the second global nutrition policy review, undertaken in 2016–2017, responding countries that had measures in place to restrict food marketing to children reported a mix of approaches used to define which foods are covered by such measures *(23)*. Of 17 countries that provided detailed information, fewer than half used nutrient profile models to define the foods covered by the policies, despite the availability of such models – nutrient profile models developed by WHO regional offices *(3–8)* are now available and can be adapted by countries. Marketing restrictions differed not only in relation to the foods included, but also the marketing channels covered – of 28 countries that provided detailed information, 93% covered television, but only 29% covered social media. Overall, an important omission in existing measures was that, of the 18 countries that had defined the age of children covered by the policy, most had policies that covered children only up to the age of 12.

[18] The Seventy-second World Health Assembly extended the period of the global action plan to 2030 to ensure its alignment with the 2030 Agenda for Sustainable Development.

[19] This number was collated by WHO from the WHO Global database on the Implementation of Nutrition Action (GINA) and the WHO Noncommunicable Disease Document Repository.

In response to Member State requests, and to strengthen and streamline support for Member States in developing and implementing new, or strengthening existing, public policies to protect children from the harmful impact of food marketing, WHO began the process of developing this guideline, taking new evidence into consideration.

Because no single intervention can ensure that all aspects of the food environment support healthy diets, a comprehensive package of policy actions is required. Therefore, guidelines are being developed for multiple policy actions in addition to policies to restrict food marketing, including nutrition labelling policies, fiscal policies and school food and nutrition policies. Prioritization of policies will depend on country context.

The scope of this guideline relates to policies to protect children from the harmful impact of food marketing, with a focus on marketing of foods and non-alcoholic beverages that are high in saturated fatty acids, *trans*-fatty acids, free sugars or salt. Policies assessed for this guideline comprised mandatory, legally enforceable measures (including statutory approaches, regulations, legislation or orders used by a jurisdiction's legal system) and voluntary measures (including self-regulatory measures, pledges and codes). They did not include action plans, strategies, programmes or initiatives. This guideline does not address the impact of food marketing on adults, including caregivers and parents. Finally, this guideline is not an implementation manual. It does not describe *how* countries can implement and monitor policies to protect children from the harmful impact of food marketing, but rather recommends *what* measures to take.

The WHO guidelines on policies to improve the food environment are in line with other WHO guidelines and recommendations, including guidelines on sodium intake *(27)* and sugars intake *(28)*; forthcoming guidelines on total fat, saturated fatty acids and *trans*-fatty acids, polyunsaturated fatty acids, carbohydrates, use of non-sugar sweeteners and use of low-sodium salt substitutes; and the recommendations of the WHO Commission on Ending Childhood Obesity *(29)*. The guidelines on policies to improve the food environment will be used in conjunction with available tools and frameworks, including the nutrient profile models developed by the WHO regional offices for regulating marketing of foods and non-alcoholic beverages to children *(3–8)*.

1.3 Objectives

The objectives of this guideline are to:

- guide Member States on the development and implementation of evidence-informed policies to protect all children from the harmful impact of food marketing;

- enable evidence-informed advocacy to advance policy action to restrict food marketing practices;
- guide future research to further strengthen the evidence base for policy action to restrict food marketing; and
- enable the development of healthy dietary practices among children.

As noted above, this WHO guideline is one of several on policies to improve the food environment – additional WHO guidelines have been developed on school food and nutrition policies *(26)*, nutrition labelling policies *(25)* and fiscal policies *(24)*. The overarching objective of these guidelines is to contribute to the achievement of healthier populations, in line with the WHO Thirteenth General Programme of Work (2019–2023) *(79)*. The WHO guidelines on policies to improve the food environment will also contribute to implementation of a number of additional calls to action relating to nutrition and health, including:

- the Political Declaration of the High-level Meeting of the United Nations General Assembly on the Prevention and Control of NCDs held in New York in September 2011 and the outcome document (A/RES/68/300) of the High-level Meeting of the United Nations General Assembly on the Prevention and Control of NCDs held in New York in July 2014;
- the recommendations of the Commission on Ending Childhood Obesity established by the WHO Director-General in May 2014;
- the commitments of the Rome Declaration on Nutrition and recommended actions in the Framework for Action, which recommends a set of policy options and strategies to promote diversified, safe and healthy diets at all stages of life; these were adopted by the Second International Conference on Nutrition in 2014 and endorsed by the 136th session of the WHO Executive Board (in January 2015) and the Sixty-eighth World Health Assembly (in May 2015), which called on Member States to implement the commitment of the Rome Declaration on Nutrition across multiple sectors;
- the goals of the UN Decade of Action on Nutrition (2016–2025), declared by the UNGA in April 2016, which include increased action at the national, regional and global levels to achieve the commitments of the Rome Declaration on Nutrition by implementing policy options included in the Framework for Action and evidence-informed programme actions;
- the acceleration plan to stop obesity adopted at the WHA75 in May 2022 together with the intermediate outcome and process targets; and
- the 2030 Agenda on Sustainable Development and the Sustainable Development Goals, particularly Goal 2 (“zero hunger”).

1.4 Target audience

The guideline is intended for a wide audience involved in the development, design, implementation, monitoring and evaluation, and advocacy of policies to protect children from the harmful impact of food marketing. The end users for this guideline are thus:

- national and local policy-makers and food regulators involved in developing, designing, implementing, monitoring or evaluating marketing policies;
- implementers and managers of national and local health and nutrition programmes;
- organizations (including nongovernmental organizations) and professional societies involved in advocating for, developing and evaluating marketing policies;
- health professionals, including managers of health and nutrition programmes and public health policy-makers in all settings;
- scientists and other academic actors involved in relevant research (including policy evaluation); and
- representatives of the food industry, marketing/advertising agencies and related associations involved in implementing marketing policies.

2 How this guideline was developed

This guideline was developed in accordance with the WHO process for development of evidence-informed guidelines outlined in the *WHO handbook for guideline development (30)*. This section describes the contributors to the guideline development process and the steps taken.

2.1 Contributors to guideline development

This guideline was developed by the WHO Department of Nutrition and Food Safety and other members of the WHO Secretariat (**Annex 1**), together with the contributors described below.

WHO Steering Committee

An internal steering committee (**Annex 2**) provided initial inputs to development of the guideline. The WHO Steering Committee included representatives from relevant departments in WHO with an interest in the provision of advice on food environment policies, determinants of health, health promotion, and maternal and child health.

Guideline development group

A guideline development group (**Annex 3**) – the WHO Nutrition Guidance Expert Advisory Group (NUGAG) Subgroup on Policy Actions – was convened with the main functions of determining the scope and key questions of the guideline (including the target population, intervention, comparator and outcomes of interest), reviewing the evidence and formulating evidence-based recommendations. The NUGAG Subgroup on Policy Actions included experts identified through an open call for experts in 2018, and people who had participated in previous WHO expert consultations or were members of WHO expert advisory panels. In forming the group, the WHO Secretariat considered the need for expertise from multiple disciplinary areas, representation from all WHO regions and a balanced gender mix. Efforts were made to include experts in complex interventions; development and/or implementation of policies to protect children from the harmful impact of food marketing; and systematic review, programme evaluation and Grading of Recommendations Assessment, Development and Evaluation (GRADE) methodologies.

External resource people

Various external resource people, including methods experts and members of the systematic review teams, attended the meetings of the NUGAG Subgroup on Policy Actions (**Annex 4**). The systematic review team was led by Dr Emma Boyland, University of Liverpool. It undertook two systematic reviews *(31, 32)* and a narrative review to support development of the guideline *(33)*.

External peer review group

[To be added]

Public consultation

[To be added]

2.2 Guideline development process

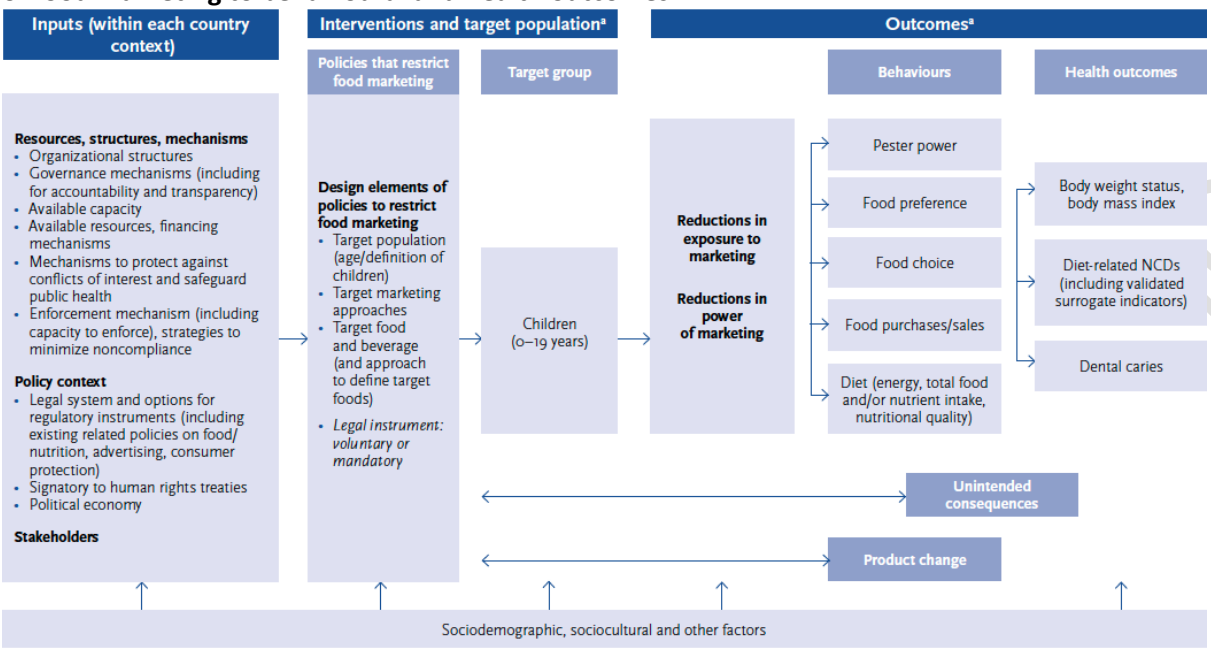
Scoping of the guideline

A scoping review of existing evidence was prepared by Dr Emma Boyland, University of Liverpool. The scoping review included a review of newly available evidence on the impact of food marketing to children on food behaviours and health outcomes among children, and on the impact of policies to restrict food marketing on exposure to food marketing, the power of food marketing, food behaviours and health outcomes among children.

Formulation of key questions and prioritization of outcomes

Policy measures to promote healthy diets, including policies to protect children from the harmful impact of food marketing, are implemented within complex systems (including the food system) that are country-specific, and influenced by political, legal, economic, cultural and ethical contexts. As proposed in the *WHO handbook for guideline development*, logic models can be used during guideline planning to show interventions of interest and elements of the system in which they are implemented to help formulate guideline questions *(30)*. **Fig. 2** shows a logic model depicting pathways from policies to protect children from the harmful impact of food marketing to behavioural and health outcomes. It indicates the complexity of such policies and the range of contextual factors that influence a policy's impact on the outcomes of interest.

Fig. 2. Logic model depicting pathways from policies to protect children from the harmful impact of food marketing to behavioural and health outcomes



[a] Interventions, target population and outcomes shown in the figure are those prioritized by the members of the WHO Nutrition Guidance Expert Advisory Group (NUGAG) Subgroup on Policy Actions in formulating the research question for the evidence review to inform the guideline on policies to protect children from the harmful impact of food marketing.

Considering the scoping review and the logic model, research questions were formulated using the population, intervention, comparator and outcome (PICO) format. Draft PICO questions were first discussed and reviewed by the WHO Secretariat, the WHO Steering Committee, and the NUGAG Subgroup on Policy Actions. The final PICO questions were determined by the NUGAG Subgroup on Policy Actions. Priority outcomes were ranked as critical or important outcomes via anonymous online voting.

The two PICO questions were as follows.

- What is the effect on the outcomes of interest of exposure of children to food marketing, compared with no marketing?
- What is the effect on the outcomes of interest of implementing a policy that aims to restrict children's exposure to food marketing and its persuasive power, compared with not implementing a policy?

Table 1 provides details of the key questions in PICO format.

Table 1. Population, intervention, comparator and outcomes for key questions

Measure	Key question 1	Key question 2
Population	Children (0–19 years) and, for the food purchasing/sales outcome only, parents or other adults making purchases on behalf of children 0–19 years Disaggregation by age, sex, gender, BMI, SES, rurality, region (HICs and LMICs)	Children (0–19 years) Disaggregation by age, sex, gender, BMI, SES, rurality, region (HICs and LMICs)
Intervention	Exposure to marketing for foods (including non-alcoholic beverages)	Policies that aim to restrict food marketing to children, comprising mandatory, legally enforceable measures (including statutory approaches, regulations, legislation or orders used by a jurisdiction's legal system) and voluntary measures (including self-regulatory measures, pledges or codes), but excluding action plans, strategies, programmes and initiatives Disaggregation by target population, target marketing channels, approach to defining target foods, voluntary or mandatory approach, and degree and quality of implementation and enforcement
Comparator	Exposure to no marketing, less marketing or less powerful marketing for foods (including non-alcoholic beverages)	No policy, or different policies that aim to restrict marketing to children
Critical outcomes	Food preferences Food choice or intended choice Food purchasing/sales or intended purchasing Dietary intake	Exposure to marketing Power of marketing Food preferences Food choice or intended choice Food purchasing/sales or intended purchasing Dietary intake
Important outcomes	Product requests or intended requests Dental caries/erosion Body weight/BMI/obesity Diet-related NCDs (or validated surrogate indicators)	Product requests or intended requests Dental caries/erosion Body weight/BMI/obesity Diet-related NCDs (or validated surrogate indicators) Product changes Unintended consequences

BMI: body mass index; HIC: high-income country; LMIC: low- and middle-income country; NCD: noncommunicable disease; SES: socioeconomic status

The nature of food marketing has evolved since the previous review, in 2009, on the impact of food marketing *(16)* – on which the 2010 WHO set of recommendations on the marketing of foods and non-alcoholic beverages to children *(1)* was based. As well, the scoping review *(75)* identified a growing evidence base on the impact of food marketing. Consequently, a new systematic review on the impact of food marketing on the outcomes of interest was commissioned. A second systematic review – to assess the evidence on the effectiveness of implemented policies, including to determine their potential desirable and undesirable effects, and explore policy design elements – was also commissioned, as none of the identified reviews adequately answered the formulated research question.

The NUGAG Subgroup on Policy Actions requested an additional review to provide contextual information relevant to implementation of policies to protect children from the harmful impact of food marketing. The contextual factors in the review included those outlined in the *WHO handbook for guideline development* (Chapters 10 and 18) *(30)* and reflect elements of the logic model. The inputs – for example, human and financial resources, and the policy context – impact the feasibility and acceptability of the intervention. Additional questions were formulated to guide the review of contextual factors (**Table 2**).

Table 2. Guidance questions for the review of contextual factors

Factor	Guidance questions
Values	What are the values people affected by the intervention assign to the intervention health outcomes?
Resource implications	What is the value for money of the intervention in terms of cost–benefit ratio/cost-effectiveness/cost utility, including the impact on national/global healthcare costs in the short term and long term, and the impact on government revenue (including the use of additional revenue; and issues of noncompliance, inflation, black market or cross-border trade)?
Equity	What is the impact of the intervention on (health) (in)equality and/or (health) (in)equity, including food and nutrition security (unequal and/or unfair access to food)? Is the intervention sensitive to sex, gender, age, ethnicity, religion, culture, language, sexual orientation/gender identity, disability status, education, SES, place of residence (including issues of social stigma, household expenditure, financial regressivity, and jobs/employment)?
Human rights	Is the intervention in accordance with human rights standards, and what is the impact of the intervention on human rights (including the ability to make a competent, informed and voluntary decision)?
Acceptability	Is the intervention acceptable to governments and policy-makers, the public and consumers, and industry? Is the intervention acceptable to, and in agreement with, existing cultural and religious norms and beliefs?

	Is the intervention aligned with environmental goals and considerations?
Feasibility	What is the feasibility of developing and implementing the intervention (including barriers and facilitators)? What is the feasibility of monitoring and enforcement of the intervention (including barriers and facilitators)? Does the intervention have an impact on change within existing health or food systems (including resulting in additional interventions to improve the nutrition and health of populations)?

Evidence gathering and grading

Evidence gathered for this guideline included:

- a systematic review on the effect of policies to restrict marketing to children *(32)*;
- a systematic review on the impact of food marketing on children *(31)*;
- a narrative literature review on exposure to, and power of, food marketing, and their associations with food-related attitudes, beliefs and behaviours *(33)*; and
- a review of contextual factors (values, resource implications, equity and human rights, acceptability, and feasibility) *(34)*.

The systematic review team conducted the two systematic reviews to address the two key questions in PICO format (**Table 1**). Data that were considered relevant for the formulation of the guideline but did not meet eligibility criteria for either of the two systematic reviews were synthesized in the narrative review on the extent and nature of food marketing, as well as the associative and qualitative effects of food marketing on eating-related attitudes, beliefs and behaviours *(33)*. Reasons for excluding studies from the systematic reviews were ineligible study design or absence of a comparator group *(33)*. The review of contextual factors was conducted by WHO *(34)*. Detailed descriptions of the methods for each review are available in the review publications.

In line with the guideline development process, the certainty of evidence gathered through the systematic reviews was assessed by the systematic review team using the GRADE[20] system, as explained in detail in the published reviews. The certainty of evidence was not assessed for the narrative review or the contextual factors review.

The evidence from the draft systematic reviews and the draft GRADE assessments assigned by the systematic review team were presented to and discussed with the NUGAG Subgroup on Policy Actions,

[20] http://www.gradeworkinggroup.org/

which prompted additional analyses. The final evidence was then presented and reviewed at a meeting of the NUGAG Subgroup on Policy Actions in July 2021.

Formulation of the recommendations

In moving from evidence to recommendations, formulating the recommendations and determining the strength of the recommendations, the NUGAG Subgroup on Policy Actions discussed and assessed the evidence in the context of the desirable and undesirable effects of the recommendations, the certainty of the available evidence, values related to the health outcomes of the recommendations, the potential impact on equity and human rights, resource implications of adopting the recommendations, and the feasibility and acceptability of implementing the recommendations in different settings and to relevant actors. Evidence-to-decision tables were used to structure and document the discussion, and anonymous online voting was used to arrive at an initial judgement for each factor (**Annex 6**). Following the voting, initial judgements were discussed until the group reached consensus. Based on the evidence of effectiveness and additional contextual factors, the NUGAG Subgroup on Policy Actions developed the recommendations and associated remarks by consensus.

2.3 Management of conflicts of interest

According to the rules in the WHO *Basic documents (80)*, whenever an expert or an individual provides independent advice to WHO, including participating in WHO meetings, a declaration of interest form must be submitted, and all declarations must be analysed. In the case of guideline development, this includes all members of the guideline development group (for this guideline, the NUGAG Subgroup on Policy Actions), individuals who prepare systematic reviews and evidence profiles, and any other experts (including external peer reviewers) who participate in the process of guideline development in an individual capacity. Declaration of interest (DOI) forms were reviewed by the WHO Secretariat in consultation with the WHO Office of Compliance, Risk Management and Ethics when finalizing the composition of the NUGAG Subgroup on Policy Actions. Before every meeting, the members of the NUGAG Subgroup on Policy Actions, the members of the systematic review team and other experts who would be participating in the meeting were asked to submit their updated declaration of interest forms. In addition to the distribution of the DOI form, the WHO secretariat described the DOI process and provided an opportunity during the meeting for guideline development group members to declare any interests not provided in written form. All declared interests were reviewed by the WHO Secretariat in consultation with the Office of Compliance, Risk Management and Ethics, as necessary. The procedures for management of interests outlined in the *Guidelines for declaration of interests (WHO experts) (35)* were strictly followed.

Similarly, declaration of interest forms from external peer reviewers were assessed by the WHO Secretariat, also following the procedures for management of interests outlined in the *Guidelines for declaration of interests (WHO experts) (35)*.

3 Summary of evidence

3.1 Evidence on the nature, extent and impact of food marketing

The evidence summarized in this section is from two reviews: the narrative review on exposure to, and power of, food marketing, and their associations with food-related attitudes, beliefs and behaviours *(33)*; and the systematic review on the impact of food marketing on children *(31)*.

A total of 179 studies, published from 2009 onwards, were included in the narrative review, which found that marketing of foods that contribute to unhealthy diets remains pervasive and persuasive across the globe *(33)*.

The review used a structured narrative review approach. Articles that were retrieved in the searches for the two systematic reviews but were not eligible for inclusion in those reviews (e.g. because of unsuitable study design or comparator) were considered for inclusion in the narrative review. The findings should be interpreted as a thorough overview rather than an exhaustive account of the available evidence.

The studies were grouped as those related to:

- children's exposure to food marketing;
- the power of food marketing; and
- associations between food marketing and eating-related attitudes, beliefs and behaviours among children.

A total of 118 studies (43 solely on exposure and 75 on both exposure and power) provided evidence on children's exposure to food marketing. The majority of studies were conducted in high-income countries (HICs) only (89 studies, compared with 26 conducted in LMICs only, and three conducted in both HICs and LMICs). Studies assessed exposure to food marketing via television, digital media, product packaging, magazines and sports sponsorship; and in store, in schools, outdoors, on public transport and in restaurants. Findings of studies showed that, across marketing channels, food marketing was prevalent and predominantly promoted foods that contribute to unhealthy diets.[21] The proportion of food marketing that was identified as being for foods that contribute to unhealthy diets generally ranged from 31.0% to 93.0%. The most frequently marketed foods included fast food, sugar-

[21] The studies included in the narrative review used varying terms to describe, and varying criteria to define, foods that contribute to unhealthy diets. Frequently used definitions and descriptors for such foods in reviewed studies included "unhealthy", "foods high in fats, sugars and/or salt (HFSS)", "not permitted", "less healthy", "junk food", "energy-dense nutrient poor (EDNP)", "non-core", "ultraprocessed", "not meeting nutritional quality standards", "discretionary", "high in" or "rich in" undesirable nutrients, and "low in nutritional quality".

sweetened beverages, chocolate and confectionery, salty/savoury snacks, sweet bakery items and snacks, breakfast cereals, dairy products, and desserts. The studies showed that food marketing continues to be directed at children – one study reported that as many as 95.2% of television advertisements for food were child oriented – and that child-directed marketing is generally for less healthy food options. Studies from the United Kingdom, Australia, the United States and New Zealand indicated that exposure to food marketing varied by socioeconomic status (SES), with greater exposure among those of lower SES.

A total of 100 studies (25 solely on power and 75 on both exposure and power) provided evidence on the power of food marketing. The majority of studies were conducted in HICs only (74 studies, compared with 23 conducted in LMICs only, and three conducted in both HICs and LMICs). Studies considered food marketing via television, digital media, product packaging, magazines and sports sponsorship; and in store, in schools, outdoors and in restaurants. The studies showed that, across marketing channels, a wide variety of strategies that are likely to appeal to children were used in food marketing. These included celebrity/sports endorsements; promotional characters; product claims; promotions, gifts/incentives and tie-ins; competitions; games; colour, visual imagery and novel designs; animation, dynamic elements and special effects; prominent food cues; branding; product association; salient themes or contexts; persuasive appeals; emotional appeals; health/nutrition claims and disclaimers; depiction of physical activity; engagement techniques; interactive or downloadable content; children's language and voices, and child-related messages and fonts; and large portion sizes. Some of these strategies were more frequent in food marketing directed at children than in general marketing and in marketing for less healthy food options compared with marketing for healthier options.

A total of 36 studies (16 studies on associations between food marketing and outcomes of interest and 20 qualitative studies on the impact of food marketing) provided evidence on the effect of food marketing. Of these, 22 studies were from HICs and 14 from LMICs. Studies considered food marketing via television, video games, billboards, the internet, social media, in store and in print.

The studies on associations between food marketing and outcomes of interest covered a range of outcomes. For example, one study showed that exposure to marketing for foods that contribute to unhealthy diets was positively associated with descriptive norms about the consumption of such foods among adolescents. In another study, the frequency of consumption of such foods was affected by the entertaining dimension of advertising and the level of emotional arousal that children experienced after exposure to food marketing. Studies also reported a positive association between frequency or level of exposure to food marketing and habitual consumption of marketed foods. Two studies

indicated that engagement with food marketing (e.g. liking, sharing or commenting on social media posts; actively watching brand videos on YouTube) was associated with a greater impact on consumption than exposure to food marketing on its own. One study reported a positive correlation between the amount of time spent watching television and the prevalence of dental caries. Another reported a significant association between commercial television viewing at time 1 and body mass index (BMI) at time 2 (5 years later), which persisted after adjusting for exercise and eating while viewing television; no association was found for noncommercial television viewing.

The qualitative studies also reported on a wide range of impacts of food marketing. For example, one study reported that children could recognize advertised food in the supermarket, while another reported that adolescents could identify energy drink products by brand name. Several studies identified strategies that were likely to appeal to children in food marketing, including promotional characters, toys, playful visuals, colourful packaging, brand imagery and fun themes. Adolescents in one study reported that product packaging, the use of humour and the product's projected image were important. In another study, young adults reported that advertisements that they considered credible, entertaining, informative or relevant to them, or that contained offers, were of more interest to them. In a different study, young adults reported more positive feelings towards brands after exposure to brand websites and social media pages, and particularly content related to corporate social responsibility initiatives, community involvement and sponsorship. In multiple studies, parents reported concern about children's exposure to marketing of food and support for regulation of such marketing. Children in one study believed that "junk food" should not be advertised to them. In terms of the impact of food marketing, studies generally reported a belief among participants that food marketing influenced eating and related behaviours among young people; these included studies of children, adolescents and parents. In one of these studies, parents reported that their children wanted to purchase food shown in advertisements; in another, children reported that they had chosen a cereal because of a toy and regardless of its taste. Children also reported being influenced by advertisements that their friends on Facebook had liked or commented on. In contrast, in one study, parents believed that advertising for food had no effect on preferences or requests, and children did not believe they had learned about food from food advertising.

In summary, the narrative review showed that food marketing strategies continue to target children and adolescents by various means, including by positioning marketing in and around schools, and on digital spaces popular with young people, and by scheduling advertising in and around child-directed programming, despite the fact that one of the main WHO recommendations endorsed in 2010 was "to restrict marketing in places where children gather". The apparent continued and extensive use of

persuasive marketing techniques – and the evolution to make use of all the opportunities that new marketing platforms, particularly digital marketing platforms, can offer – is worrying.

A total of 96 studies, reported in 100 records, were included in the systematic review assessing the effect in children on the outcomes of interest of exposure to food marketing *(31)*. Table 1 outlines the population, intervention, comparator and outcomes that guided the review. Because the review was an update of a previous review conducted in 2009 *(16)*, studies were limited to those added to databases from 1 January 2009 onwards. Of the 96 included studies, 64 were randomized controlled trial (RCTs) and 32 were nonrandomized studies (21 experimental and 11 observational). The majority of studies were conducted in HICs; only six took place in LMICs.

Pooled analyses were completed for three of the four critical outcomes – food preferences, food choice or intended choice, and dietary intake – and none of the four important outcomes. For the pooled analyses, moderator analyses assessed the possible impact on the effect sizes of study design type (RCT or nonrandomized study), marketing manipulation type (exposure or power), marketing channel (television, digital or packaging) and risk of bias. The possible impact of marketing techniques (e.g. promotional characters, toys, celebrities) could not be assessed because of the small number of effect sizes for each technique within each outcome. For food choice or intended choice and dietary intake, the possible impact of mean age and BMI z-score of children on effect sizes was also assessed – this was not possible for food preferences because of the small number of effect sizes. Analyses by SES, sex, gender, rurality or region (i.e. HICs and LMICs) were not possible.

A total of 20 studies (12 RCTs and eight experimental nonrandomized studies) provided evidence on the impact of exposure to food marketing on the critical outcome of food preferences. Pooled analysis of 14 effect sizes from 12 studies found a standardized mean difference in food preferences of 0.30 (95% confidence interval (CI): 0.12–0.49; $Z = 3.21$; $P = 0.001$; $I^2 = 90.0\%$), indicating a significant effect of exposure to food marketing on food preference compared with exposure to no, less or less powerful food marketing. There was no statistical evidence that study design type, marketing manipulation type or marketing channel significantly moderated the effect size. Eight studies lacked the required data to be included in the pooled analysis – four of these found a significant association, two reported an association but did not report statistical testing, one showed apparently similar preferences between the exposure and control, and one found no significant association. According to the GRADE assessments for both the pooled analysis and all data, there is very low certainty evidence from RCTs and very low certainty observational evidence about the effect of food marketing on food preferences *(31)*.

A total of 37 studies (27 RCTs and 10 experimental nonrandomized studies) provided evidence on the impact of exposure to food marketing on the critical outcome of food choice[22] or intended choice. Pooled analysis of 27 effect sizes from 27 studies found an odds ratio of 1.77 (95% CI: 1.26–2.50; $Z = 3.27$; $P < 0.001$; $I^2 = 77.5\%$), indicating that exposure to food marketing was associated with 1.77 times the odds of choice of the test item compared with exposure to no, less or less powerful food marketing. There was no statistical evidence that study design type, marketing manipulation type, marketing channel, risk of bias or mean age of children significantly moderated the effect size. Ten studies lacked the required data to be included in the pooled analysis – six of these found a significant association, two found no significant association, one reported greater choice of the test item in the control condition but did not report test statistics (the authors suggested that this was due to issues with the demographic targeting of characters to children, with liking of characters very dependent on the age and sex of children), and one reported an association but did not report statistical testing. According to the GRADE assessments for both the pooled analysis and all data, there is moderate certainty evidence from RCTs that food marketing likely increases choice of marketed foods and very low certainty observational evidence about the effect of food marketing on food choice or intended choice *(31)*.

A total of 46 studies (31 RCTs and 15 nonrandomized studies – seven experimental and eight observational) provided evidence on the impact of exposure to food marketing on the critical outcome of dietary intake. Pooled analysis of 43 effect sizes from 41 studies found a standardized mean difference in dietary intake of 0.25 (95% CI: 0.15–0.34; $Z = 4.88$; $P < 0.001$; $I^2 = 76.6\%$), indicating a significant effect of exposure to food marketing on dietary intake compared with no, less or less powerful food marketing. There was no statistical evidence that study design type, marketing manipulation type, marketing channel, risk of bias, mean age of children or mean BMI z-score significantly moderated the effect size. Five studies lacked the required data to be included in the pooled analysis – three of these studies found a significant association, and two found no significant association. According to the GRADE assessments for both the pooled analysis and all data, there is moderate certainty evidence from RCTs that food marketing likely increases dietary intake slightly and very low certainty observational evidence about the effect of food marketing on dietary intake *(31)*.

As pooled analysis could not be completed for the important outcome of product requests or intended requests, because of a small number of studies and lack of reporting of relevant statistics, *P* value combination was used. Six studies (five RCTs and one observational nonrandomized study) provided

[22] The term "food choice" is used to describe the outcome of interest. Food choice refers to selection of one food over another (or others) from a given selection of foods and hence is limited by the foods available.

evidence. The combination of *P* values was significant in all model iterations ($P < 0.001$), indicating an effect of food marketing on product requests or intended requests. According to the GRADE assessment, there is moderate certainty evidence from RCTs that food marketing likely increases product requests or intended requests and very low certainty observational evidence about the effect of food marketing on product requests or intended requests *(31)*.

As a result of the limited availability of *P* values, vote counting by direction of effect was used for the remaining critical outcome of food purchasing/sales or intended purchasing and the important outcomes of dental caries/erosion and body weight/BMI/obesity. The five effect directions were clear effect of public health harm, unclear effect of potential public health harm, no difference in effect, unclear effect of potential public health benefit, and clear effect of public health benefit. No relevant studies were identified for the important outcome of diet-related NCDs (or validated surrogate indicators).

Five studies (one RCT and four nonrandomized studies – one experimental and three observational) provided evidence on the impact of exposure to food marketing on the important outcome of food purchasing/sales or intended purchasing. Of the five studies, one reported a clear effect of public health harm, one an unclear effect of potential public health harm, two no significant association, and one a clear effect of public health benefit (a significantly higher proportion of orders for fruit desserts on days when fruit desserts were promoted). According to the GRADE assessment, there is very low certainty evidence from RCTs and very low certainty observational evidence about the effect of food marketing on food purchasing/sales or intended purchasing *(31)*.

Two studies (both observational nonrandomized studies) provided evidence on the impact of exposure to food marketing on the important outcome of dental caries/erosion. One study reported a clear effect of public health harm, whereas the other study reported no significant association. According to the GRADE assessment, there is very low certainty observational evidence about the effect of food marketing on dental caries/erosion *(31)*.

A single observational nonrandomized study provided evidence on the impact of exposure to food marketing on the important outcome of body weight/BMI/obesity. The study reported no significant association. According to the GRADE assessment, there is very low certainty observational evidence about the effect of food marketing on body weight/BMI/obesity *(31)*.

Overall, the systematic review showed that there is moderate certainty evidence from RCTs that exposure to food marketing affects children's food choice or intended choice, product requests or

intended requests, and dietary intake, and there is very low certainty evidence from RCTs and/or observational studies for the remaining outcomes of interest (except for diet-related NCDs or validated surrogate indicators, for which no relevant studies were identified). Limitations of the evidence included that the majority of the studies related to more proximal behavioural outcomes (e.g. food preferences, food choice or intended choice, dietary intake), and fewer related to more distal health outcomes (e.g. body weight/BMI/obesity, dental caries/erosion). This is likely related to the methodological challenges involved in assessing the impact of food marketing on more distal outcomes – for example, disentangling the impact of food marketing from the complex array of other factors that contribute to outcomes such as body weight/BMI/obesity and diet-related NCDs (or validated surrogate indicators) that develop gradually over time. The evidence was predominantly from HICs, with only six studies conducted in LMICs. As a result, the representativeness of data from LMICs may be limited. Analyses by SES, sex, gender, rurality or region (i.e. HICs and LMICs) were not possible, because data on these characteristics were either reported by too few studies for each outcome or not reported by exposure groupings.

3.2 Evidence on effectiveness of policies to protect children from the harmful impact of food marketing

A total of 44 observational studies, reported in 47 records, were included in the second systematic review, which assessed the effect on the outcomes of interest of implementing a policy that aims to restrict children's exposure to food marketing, and the persuasive power of this marketing *(32)*. Table 1 outlines the population, intervention, comparator and outcomes that guided the review. The 44 included studies assessed the impact of 14 policies (including two subnational policies[23] and one regional policy[24]) implemented in 10 countries[25] and one region (the European Union) (see Annex 7 for details of included policies). Seven policies were voluntary measures. Only one study used a natural experiment design;[26] all others had cross-sectional designs. All but one of the studies were conducted in HICs; the one study conducted in an LMIC was from Mexico.

Because of the nature of the available evidence, comparators were not consistent for all studies. Studies were therefore considered according to five comparisons:

[23] Quebec (Canada) and San Francisco (United States)
[24] European region
[25] Australia, Canada, Chile, Germany, Mexico, Republic of Korea, Singapore, Spain, United Kingdom, United States
[26] Evaluation of the Quebec Consumer Protection Act, Canada *(81)*.

- comparison 1 – any policy compared with no policy (includes all studies from comparisons 2 and 3);
- comparison 2 – mandatory policy compared with no policy (i.e. post-implementation compared with pre-implementation);
- comparison 3 – voluntary policy compared with no policy (i.e. post-implementation compared with pre-implementation, or signatory companies compared with non-signatory companies);
- comparison 4 – mandatory policy compared with voluntary policy;[27] and
- comparison 5 – fully implemented mandatory policy compared with partially implemented mandatory policy.

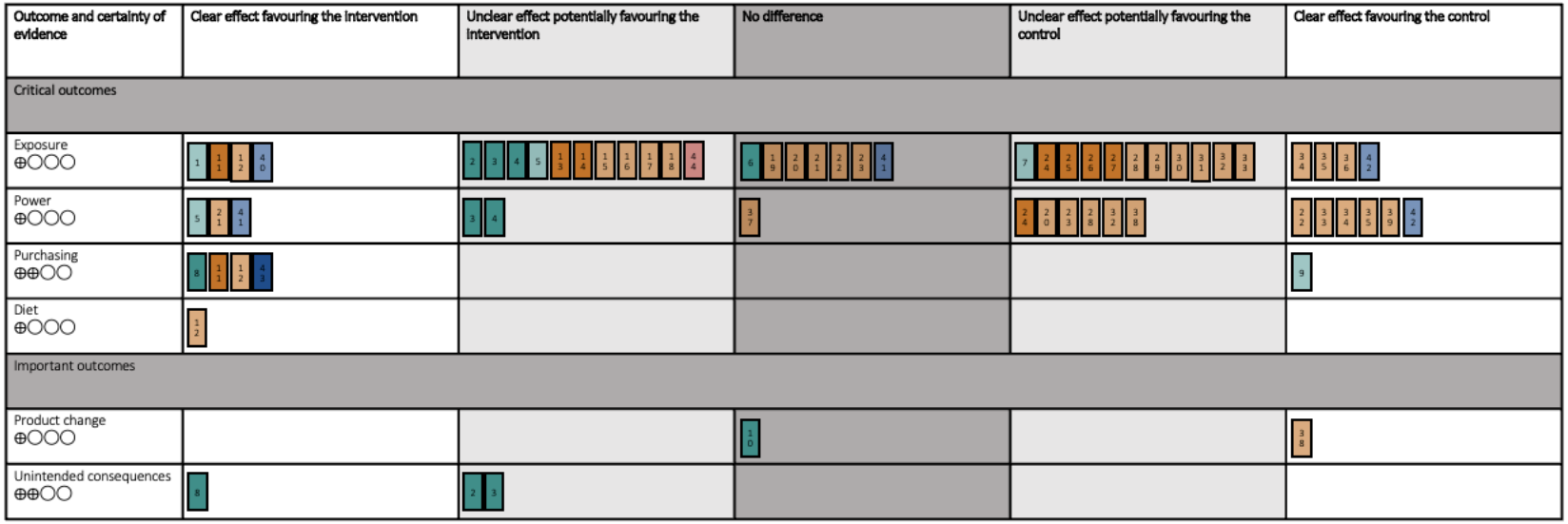
Pooled analysis could not be completed for any of the outcomes of interest, because of the heterogeneity in effect measures[28] and the lack of data required for computation of effect sizes. Because of the lack of effect estimates and limited number of *P* values, vote counting using five effect directions was used to synthesize results for the critical outcomes of exposure to food marketing, power of food marketing, food purchasing and dietary intake, and the important outcomes of product changes and unintended consequences by outcome of interest for the five comparisons described above. The five effect directions were clear effect favouring the intervention, unclear effect potentially favouring the intervention, no difference in effect, unclear effect potentially favouring the control, and clear effect favouring the control. **Fig. 3** shows the results of the vote counting for each outcome and each comparison. No evidence was found for the critical outcomes of food preference and food choice, and the important outcomes of product requests, dental caries, body weight and diet-related NCDs (or validated surrogate indicators).

Where possible, subgroup analyses compared findings based on the age definition of a child, marketing medium, approach to classifying foods to which the restrictions apply, and marketing technique. As pooled analyses could not be completed, formal sensitivity analyses were not possible – instead, results were synthesized narratively. Because of data limitations, it was not possible to complete subgroup analyses for children by body weight/BMI/obesity, SES, age group, sex, gender, rurality or region (i.e. HICs and LMICs).

[27] When mandatory policy was compared with voluntary policy, mandatory policy was considered the stronger policy because of its mandatory nature and therefore uniform application.

[28] As an example, the effect measures for the outcome of exposure to food marketing included the number of food advertisements, the rate of food advertisements, the proportion of all advertisements that were for food, the proportion of all advertisements that were for foods that contribute to unhealthy diets, the proportion of food advertisements that were for foods that contribute to unhealthy diets, nutritional quality of advertised foods, gross rating points (a measure of audience size) and person-minute-views (the viewing audience multiplied by the length of advertisements).

Fig. 3. Harvest plot of the effects of policies to restrict food marketing



Studies comparing mandatory policy with no policy
1. Dillman 2020 (exposure)
2. Kim 2013 (exposure, unintended consequences)
3. Ofcom 2008 (exposure, power, unintended consequences)
4. Ofcom 2010 (exposure, power)
5. Mediano 2019 (exposure, power)
6. Adams 2012 (exposure)
7. Campos 2016 (exposure)
8. Silva 2015 (purchasing, unintended consequences)
9. Otten 2014 (purchasing)
10. Clark 2007 (product change)

Studies comparing voluntary policy with no policy
11. Huang 2013 (exposure, purchasing)
12. Lwin 2020 (exposure, purchasing, diet)
13. Powell 2010 (exposure)
14. Powell 2011 (exposure)
15. Dembek 2012 (exposure)
16. Frazier 2018 (exposure)
17. Hebden 2011 (exposure)
18. King 2013 (exposure)
19. Berning 2013 (exposure)
20. King 2011 (exposure, power)
21. Kunkel 2015 (exposure, power)
22. Neyens 2017 (exposure, power)
23. Potvin Kent 2014b (exposure, power)
24. Harris 2015 (exposure, power)
25. Harris 2018 (exposure)
26. Potvin Kent 2018b (exposure)
27. Powell 2013 (exposure)
28. Brindal 2011 (exposure, power)
29. Harris 2017 (exposure)
30. Landwehr 2020 (exposure)
31. Theodore 2017 (exposure)
32. Vergeer 2019 (exposure, power)
33. Warren 2007 (exposure, power)
34. Effertz 2012 (exposure, power)
35. Potvin Kent 2011b (exposure, power)
36. Potvin Kent 2018a (exposure)
37. Potvin Kent 2013 (power)
38. Vaala 2020 (power, product change)
39. Galloway 2014 (power)

Studies comparing mandatory policy with voluntary policy
40. Potvin Kent 2012 (exposure)
41. Potvin Kent 2011a (exposure, power)
42. Morton 2015 (exposure, power)
43. Dhar 2011 (purchasing)

Studies comparing fully implemented mandatory policies with partially implemented mandatory policies
44. Whalen 2017 (exposure)

Notes: Each bar represents one study; the number in each bar corresponds to the list of studies beneath the plot. Green indicates comparison of mandatory policy with no policy; orange indicates comparison of voluntary policy with no policy; blue indicates comparison of mandatory policy with voluntary policy; red indicates comparison of fully implemented mandatory policy with partially implemented mandatory policy; dark shading indicates a high-quality study. Certainty of the evidence: ⊕◯◯◯: very low; ⊕⊕◯◯: low; ⊕⊕⊕◯: moderate; ⊕⊕⊕⊕: high.

Overall, 37 studies provided evidence on the effect of food marketing policy on **exposure to food marketing**. Of these, four studies reported effects clearly favouring the intervention, 11 reported unclear effects potentially favouring the intervention, seven reported no effects of the intervention, 11 reported unclear effects potentially favouring the control, and four reported effects clearly favouring the control. As shown in **Fig. 3**, however, the distribution of studies varied between the comparisons – studies comparing mandatory policy with no policy were more likely to report effects clearly or potentially favouring the intervention (five out of seven studies – 71% of studies) than studies comparing voluntary policy with no policy (eight out of 26 studies – 31% of studies). Additionally, studies evaluating voluntary measures were more likely to show effects on exposure to, and power of, food marketing that were unfavourable to public health than effects that were favourable. Overall, subgroup analyses of other policy design elements showed that studies were more likely to report effects clearly or potentially favouring the intervention when policies designed to restrict food marketing to children included those older than 12 years (as opposed to policies designed to restrict food marketing to children 12 years of age or under), policies used a nutrient profile model (as opposed to policies using company-specific nutritional criteria or category-specific uniform nutritional criteria), and policies addressed exposure to television food marketing or packaging (as opposed to digital marketing). The GRADE assessment found that there is very low certainty evidence about the effect of food marketing policy on exposure to food marketing *(32)*.

A total of 18 studies provided evidence on the effect of food marketing policy on **power of food marketing**. Of these, three studies reported effects clearly favouring the intervention, two reported unclear effects potentially favouring the intervention, one reported no effects of the intervention, six reported unclear effects potentially favouring the control, and six reported effects clearly favouring the control. As with exposure to food marketing, the distribution of studies varied between the comparisons (**Fig. 3**) – studies comparing mandatory policy with no policy were far more likely to report effects clearly or potentially favouring the intervention (three out of three studies – 100% of studies) than studies comparing voluntary policy with no policy (one out of 13 studies – 8% of studies). Additionally, studies evaluating voluntary measures were more likely to show effects on the power of food marketing that were unfavourable to public health than effects that were favourable. Overall, subgroup analyses of other policy design elements showed that studies were more likely to report effects clearly or potentially favouring the intervention when policies designed to restrict food marketing to children included those older than 12 years (as opposed to policies designed to restrict food marketing to children 12 years or under), policies restricted the use of promotional characters (as opposed to policies that restricted a broader range of child-appealing persuasive techniques or animation techniques), and policies addressed power of television food marketing or packaging (as

opposed to digital marketing). The GRADE assessment found that there is very low certainty evidence about the effect of food marketing policy on power of food marketing *(32)*.

Five studies provided evidence on the effect of food marketing policy on **food purchasing**. Of these, four studies reported effects clearly favouring the intervention, and one study reported effects clearly favouring the control. The GRADE assessment found that there is low certainty evidence about the effect of food marketing policy on food purchasing *(32)*.

One study provided evidence on the effect of food marketing policy on **dietary intake**; the study reported effects clearly favouring the intervention. The GRADE assessment found that there is very low certainty evidence about the effect of food marketing policy on dietary intake *(32)*.

Two studies provided evidence on the effect of food marketing policy on **product change**. Of these, one study reported no effects of the intervention, and one study reported effects clearly favouring the control. The GRADE assessment found that there is very low certainty evidence about the effect of food marketing policy on product change *(32)*.

Three studies provided evidence on the effect of food marketing policy on **unintended consequences**. Of these, one study reported effects clearly favouring the intervention, and two reported unclear effects potentially favouring the intervention. The GRADE assessment found that there is low certainty evidence about the effect of food marketing policy on unintended consequences *(32)*.

Overall, the certainty of evidence that was included in the systematic review was very low, which could partly be due to weakness in policy designs and the design of evaluative studies. A notable finding was that policies restricting food marketing may result in a reduction in purchases. As well, several studies reported effects of food marketing policies that were desirable (or potentially desirable) for public health through their effects on children's exposure to food marketing and/or the power of marketing. Limitations of the evidence included that the majority of the included studies related to outcomes that are more proximal (e.g. exposure to marketing, power of marketing); fewer related to outcomes that are more distal (e.g. body weight/BMI/obesity, dental caries/erosion). This likely relates to the methodological challenges involved in assessing the impact of policies on more distal outcomes – for example, disentangling the impact of policies to restrict food marketing from the complex array of other factors that contribute to outcomes such as body weight/BMI/obesity and diet-related NCDs (or validated surrogate indicators) that develop gradually over time. The evidence was predominantly from HICs, with only one study conducted in an LMIC. As a result, the representativeness of data from LMICs may be limited. A lack of reporting of effect estimates and *P* values prevented pooled analyses.

Analyses by body weight/BMI/obesity, SES, age group, sex, gender, rurality or region (i.e. HICs and LMICs) were not possible.

3.3 Evidence on contextual factors

A total of 244 publications were included in the review of contextual factors relevant to policies to protect children from the harmful impact of food marketing *(34)*. The overall aim of the review was to search for, identify, summarize and present information on the impact of contextual factors on implementation of policies to protect children from the harmful impact of food marketing.

Fifty-eight publications provided evidence related to **values**. Study populations varied in their values about body weight status. In HICs, overweight and obesity were generally perceived as a serious health problem. Women were more likely than men to perceive overweight and obesity (especially childhood obesity) as a serious health problem, as were people of lower SES compared with their higher SES counterparts. In contrast, in many studies from LMICs, overweight and obesity were perceived as indicating good health or interpreted as "normal weight". However, in some countries that have perceived overweight and obesity as indicating good health, values are changing, and normal-weight BMI is increasingly considered healthy. In contrast to values about body weight status, there was no variability in values about diet-related NCDs, or dental caries and erosion in children, which were perceived negatively in all identified studies. Limited information was identified on the potential impact of food marketing on values or whether consumers value "non-misleading" information.

Nine publications provided evidence related to **resource implications**. Evidence was identified in modelling studies and impact assessments, from both HICs and LMICs. The expected costs of such policies, expected health gains, expected healthcare cost savings and cost-effectiveness differed depending on country context, and the design and regulatory nature of policies. All identified modelling studies, however, found that policies to protect children from the harmful impact of food marketing would be cost-effective over the long term (generally after 50 years). Studies noted that, like other interventions targeting children, policies to protect children from the harmful impact of food marketing may take some time to have an impact. Costs included in various studies included planning, implementation and compliance costs; savings typically included healthcare cost savings. One study estimated that self-regulation would be less costly than government regulation but that its effects would also be less as a result of presumed lower compliance.

Fifty-nine publications provided evidence related to **human rights** and **equity**. Policies to protect children from the harmful impact of food marketing appear to be in accordance with human rights standards. Not protecting children from the harmful impact of food marketing may jeopardize the

fulfilment of the Convention on the Rights of the Child, including in relation to Article 24 (the right to health) and Article 17 (protection from material injurious to well-being). The Committee on the Rights of the Child has also noted that targeted and age-inappropriate digital marketing should be regulated to prevent exposure of children to "the promotion of unhealthy products, including certain food and beverages". Special Rapporteurs on the right of everyone to the enjoyment of the highest attainable standard of health and the right to food have also emphasized the need for regulation of marketing directed towards children. Limited evidence was identified on the impact on health equity of policies to protect children from the harmful impact of food marketing. However, research in HICs shows that children of lower SES are more exposed to food marketing than children of higher SES, and this can lead to or worsen health inequities. As such, policies to protect children from the harmful impact of food marketing can be expected to reduce health inequities. Reflecting this, a modelling study from Australia found that restrictions on food marketing to children on television were likely to have greater health benefits and greater healthcare cost savings for children of lower SES than for those of higher SES.

A total of 118 publications provided evidence related to **acceptability**. The evidence showed that acceptability of policies to protect children from the harmful impact of food marketing varied greatly by stakeholder. The existence of such policies, or national action plans that recommend implementation of such policies, indicates acceptability to government and policy-makers. For example, 40% of the 167 participating countries in the most recent global nutrition policy review reported including the regulation of food marketing to children as an action area in national nutrition policies. However, few countries have implemented comprehensive policies to restrict food marketing to children – 42 countries reported in the second global nutrition policy review that they have measures in place, which included guidelines or codes (voluntary or mandatory); few measures were integrated into national law. Evidence identified from HICs indicates that policies to protect children from the harmful impact of food marketing are largely acceptable to the public. Women were consistently more supportive than men. Support also varied by age, ethnicity and SES. There was a lack of evidence from LMICs. Industry generally opposed government-led restrictions, but offered voluntary self-regulatory policies as an alternative. When initiated by industry, such policies can be considered a strategy to prevent the introduction of strong, legally enforceable government regulations. Limited evidence was found relating to environmental acceptability.

Thirty-two publications provided evidence related to **feasibility**. The existence of policies in some countries to protect children from the harmful impact of food marketing points to their feasibility, although many countries are yet to develop or implement such policies. Evidence identified on

feasibility showed that facilitators of the development and implementation of policies include strong political leadership, supporting evidence, intersectoral collaboration and community support. Barriers to development and implementation include complexity of regulatory processes, conflicting interests, a lack of financial and human resources, industry interference, a weak evidence base, and ambiguous categorization of, or lack of criteria for, foods for which marketing is to be restricted or banned. Facilitators of monitoring and enforcement include clear guidelines and protocols, independent monitoring, transparency and monetary penalties. Barriers to monitoring and enforcement include a lack of transparency and accountability, conflicting interests in reporting of compliance, methodological difficulties, and inadequate human and financial resources.

4 Good-practice statement and recommendations

4.1 Good-practice statement

Children should be protected from the harmful impact of food marketing.[29]

Rationale

- Food marketing continues to be prevalent, including on packaging and in settings where children gather (e.g. schools, sports clubs), during children's viewing times and on children's channels, in youth magazines, and on social media, and uses many techniques appealing to or resonating with young audiences *(33)*.
- Digital food marketing facilitates engagement, which can amplify the marketing message and the overall impact of marketing *(33)*.
- Food marketing is mostly for foods that are inconsistent with healthy diets *(33)*. Across studies, the most frequently marketed food categories were "fast food", sugar-sweetened beverages, chocolate and confectionery, salty/savoury snacks, sweet bakery items and snacks, breakfast cereals and desserts *(31)*.
- Food marketing has a harmful impact on children's food choice[30] and their dietary intake (moderate certainty of evidence) *(31)*.
- Food marketing affects children's purchase requests to adults for marketed foods (moderate certainty of evidence) *(31)*, and influences the development of children's norms about food consumption *(33)*.
- Enabling children to achieve their full developmental potential is a human right and a critical foundation for sustainable development.
- Countries that have ratified the Convention on the Rights of the Child have a legal obligation to realize children's right to the highest attainable standard of health. According to the Convention "In all actions concerning children, whether undertaken by public or private social welfare institutions … the best interests of the child shall be a primary consideration".[31]
- Furthermore, countries that have ratified the Convention on the Rights of the Child should ensure that marketing does not have adverse impacts on children's rights by adopting

[29] "Marketing" refers to any form of commercial communication or message that acts to advertise or otherwise promote a product, its related brand or a service and is designed to increase, or has the effect of, increasing the recognition, appeal and/or consumption of particular products and services *(1, 2)*. "Food" includes both foods and non-alcoholic beverages. "Harmful impact" refers to an undesirable impact on dietary behaviours that are inconsistent with guidance on healthy diets.

[30] The term "food choice" is used in this guideline to describe one of the outcomes of interest. Food choice refers to the selection of one food over another (or others) from a given selection of foods and hence is limited by the foods available.

[31] Article 3.1, Convention on the Rights of the Child, 1989 (https://www.ohchr.org/en/professionalinterest/pages/crc.aspx)

appropriate regulation [32] and should "make the best interests of the child a primary consideration when regulating advertising and marketing addressed to and accessible to children".[33]

4.2 Recommendations

Recommendation 1

WHO suggests implementation of policies to restrict food marketing to which children are exposed.

Conditional recommendation,[34] very low certainty evidence

Recommendation 2

To maximize effectiveness of food marketing restrictions, WHO suggests that policies:

- be mandatory;
- protect children of all ages, including those older than 12 years;
- use a nutrient profile model to classify foods to be restricted from marketing;
- be broad enough to minimize the risk of migration of marketing to other channels, to other spaces within the same channel or to other age groups; and
- restrict the power of food marketing to persuade.

Conditional recommendation, very low certainty evidence

Remarks

- Regarding policy design elements, evidence indicates that voluntary measures are more likely to show undesirable effects than desirable effects for exposure to, and power of, marketing *(32)*.
- Most policies currently restrict marketing to young children and define a child as less than 12 years of age. However, evidence indicated that policies designed to restrict food marketing to children that included children older than 12 years were more likely to report desirable effects *(32)*.

[32] General comment No. 16 (2013) on State obligations regarding the impact of the business sector on children's rights. United Nations Committee on the Rights of the Child; 2013.
[33] General comment No. 25 (2021) on children's rights in relation to the digital environment. United Nations Committee on the Rights of the Child; 2021.
[34] The recommendation is conditional because the guideline development group was less certain about the desirable effects of implementing the intervention, as these depend on policy design elements and contextual factors. However, no undesirable effects of restricting food marketing were identified.

- Policies using a nutrient profile model to classify restricted foods were more likely to show desirable effects than policies that use company-specific nutritional criteria or category-specific uniform nutritional criteria *(32)*.
- Given that the impact of marketing is a function of both exposure and power, policies should address children's exposure to food marketing, irrespective of timing, venue or intended audience *(1)*, and should therefore go beyond children's media *(31, 33)*.
- The power of food marketing to persuade relates to techniques appealing to and resonating with children, including promotional characters and celebrity endorsements; these techniques impact dietary intake *(31)*.

5 Implementation considerations

The causes of malnutrition are complex, and no single intervention will reduce malnutrition in all its forms. A comprehensive policy approach is needed to create enabling and supportive food environments, and actions should be considered in the context of the myriad other individual, social and environmental influences on nutrition. Such a comprehensive approach has consistently been recommended in numerous previous calls to action and global strategies, including the Framework for Action of the Second International Conference on Nutrition *(12)* and the UN Food Systems Summit.

This guideline focuses on policies to protect children from the harmful impact of food marketing. It builds on the WHO set of recommendations on the marketing of foods and non-alcoholic beverages to children *(1)* and takes new evidence into consideration. The 2012 WHO framework for implementing the set of recommendations from 2010 *(2)* continues to be a useful resource for policy-makers and relevant actors when initiating and developing policies to protect children from the harmful impact of food marketing. The implementation framework should now be used in conjunction with the recommendations in this guideline.

This guideline has taken a risk- and rights-based approach, providing a good-practice statement and two evidence-informed recommendations. Public policies to protect children from the harmful impact of food marketing are in line with children's rights *(34)*. The Convention on the Rights of the Child outlines the legal obligations of governments to protect children – including from the harmful impact of food marketing – and provides a clear foundation for the integration of a child rights approach in public policies *(72, 82)*.

The recommendations in this guideline should be considered together with those in other WHO guidelines on policies to improve the food environment, including WHO guidelines on school food and nutrition policies *(26)*, nutrition labelling policies *(25)* and fiscal policies *(24)*. Also relevant for improving the food environment and promoting healthy diets are the WHO guideline on school health services *(83)*; the Global Standards for Health Promoting Schools *(84)*; WHO guidelines on sodium intake *(27)* and sugars intake *(28)*; forthcoming WHO guidelines on total fat, saturated fatty acids and *trans*-fatty acids, polyunsaturated fatty acids, carbohydrates, use of non-sugar sweeteners and use of low-sodium salt substitutes; and the recommendations of the WHO Commission on Ending Childhood Obesity *(29)*.

The recommendations in this guideline may require adaptation to the local context of WHO regions and Member States, including the country's nutritional situation, cultural context, locally available

foods, dietary customs, available resources and capacities, and existing policies and governance structures. Factors such as strong political leadership, supporting evidence, intersectoral collaboration and community support may facilitate the development and implementation of policies to protect children from the harmful impact of food marketing. On the other hand, complex regulatory processes, conflicting interests, a lack of financial and human resources, industry interference, a weak evidence base, and ambiguous categorization of, or a lack of criteria for categorization of, foods for which marketing is to be restricted or banned may hinder development and implementation *(34)*.

The WHO set of recommendations on the marketing of foods and non-alcoholic beverages to children, published in 2010, indicated that a variety of policy instruments could be used *(1)*. However, the systematic review on the effectiveness of policies that was commissioned to support the development of this guideline found that studies evaluating voluntary measures were more likely to show effects on exposure to, and the power of, food marketing that were unfavourable to public health than effects that were favourable *(32)*. This guideline therefore recommends use of a mandatory approach. Previous research has also shown that voluntary measures have had little impact on children's exposure to food marketing; in contrast, industry-sponsored research has shown "a remarkably high adherence to voluntary codes" *(85)*.

Policies that restrict only marketing "targeted at" or "directed at" children fail to adequately limit children's exposure to food marketing, as children are exposed to considerable marketing that falls outside this scope, such as marketing during mixed-audience television programmes (e.g. sporting events, music/talent-show competitions) and on general-use apps (e.g. YouTube, Instagram, Snapchat, Facebook) *(86)*. This guideline therefore recommends that policies restrict "food marketing to which children are exposed". This broadens the scope of policies to protect all children and expands on the WHO set of recommendations on the marketing of foods and non-alcoholic beverages to children. Recommendation 2 of the 2010 set of recommendations states that "Given that the effectiveness of marketing is a function of exposure and power, the overall policy objective should be to reduce both the exposure of children to, and power of, marketing of foods high in saturated fats, *trans*-fatty acids, free sugars, or salt" *(1)*. Also, to reflect the evolution of communication channels, policies should restrict food marketing in "timings, venues and channels/platforms where children are viewing or present in high absolute numbers … irrespective of whether adults are also in the audience" *(86)*.

This guideline also recommends that policies protect children of all ages, including those older than 12 years. Some policies have sought to restrict marketing only to younger children (e.g. under 12 years of age), but evidence shows that older children are also susceptible to food marketing *(71)*. In addition,

under the Convention on the Rights of the Child, all children (i.e. all those under 18 years of age) have the right to health, which can be protected via restrictions on food marketing *(72)*. The systematic review on the effectiveness of policies indicated that policies designed to restrict marketing to children that included children older than 12 years were more likely to report desirable effects *(32)*.

Building on the 2010 WHO set of recommendations on the marketing of foods and non-alcoholic beverages to children *(1)*, the foods for which marketing is to be restricted should be clearly defined in policies, to facilitate uniform implementation. Further to the set of recommendations, more recent evidence indicates that, ideally, this should be done using a nutrient profile model. The systematic review on the effectiveness of policies found that policies that used a nutrient profile model were more likely to show desirable effects than policies that used company-specific nutritional criteria or category-specific uniform nutritional criteria *(32)*. The nutrient profile models developed by the WHO regional offices for regulating marketing of foods and non-alcoholic beverages to children *(3–8)* provide an existing tool that countries can use. In countries where resources are limited, use of existing nutrient profile models to define the foods for which marketing is to be restricted may be beneficial *(36)*.

Policies should also be as broad as possible in terms of the marketing channels covered (e.g. television, digital, packaging, outdoors, sponsorship) – including taking into account the evolving marketing landscape (e.g. increasing digital marketing) – to protect children from exposure and prevent the migration of food marketing to other marketing channels to which children are exposed.

Marketing that originates from sources outside a national jurisdiction is typically not covered by national policies *(2)*. Action to reduce children's exposure to cross-border marketing, and thereby its impact, is necessary, not least because of the borderless reach of digital media *(36–40)*. Government lawyers can support policy-makers in identifying legal instruments that can be used to enforce cross-border marketing restrictions.

Although the 2010 set of recommendations on the marketing of foods and non-alcoholic beverages to children does not refer explicitly to the promotion of brands (as distinct from products and services), the 2012 framework for implementing the set of recommendations states that efforts to restrict marketing also need to consider how brands are marketed because certain brands are clearly associated with unhealthy products or services *(2)*. Brand marketing is frequently used in marketing of foods that are inconsistent with a healthy diet. For example, child-oriented fast food advertisements often focus on building familiarity and brand loyalty, rather than promoting taste, nutritional value or specific foods *(42)*. Research also suggests that, in the context of an advertisement

for a "healthy fast food meal bundle", exposure to brand marketing for a fast food brand typically associated with less healthy foods does not increase selection of healthier choices but does increase children's liking for fast food in general *(87)*. Although further research is needed on the impact of brand marketing compared with product marketing (see section 6), the definition of marketing used in this guideline encompasses brand marketing. Possible approaches that countries could use to restrict brand marketing include classifying brands as permitted or not permitted based on whether their top-selling products are classified as healthy or unhealthy *(2)* and restricting marketing of brands that are synonymous with less healthy products *(86)*.

Establishment of mechanisms to allow continuous monitoring and enforcement, and use of sanctions to deter noncompliance, may improve the effectiveness of policies *(2, 34)*. Considerations in establishing such mechanisms should include how, and by whom, complaints about noncompliance can be filed; roles and responsibilities for monitoring and enforcement; resource requirements; and the nature and extent of sanctions and penalties *(2)*. Ideally, monitoring should begin before policy implementation to allow evaluation of the policy's effect. A recent qualitative comparative analysis of regulatory governance conditions that support effective food policies explored conditions that may increase the effectiveness of food environment policies more broadly – these included existence of a monitoring system, and government or independent third-party monitoring *(88)*. Given that a wide range of outcomes can be monitored (e.g. exposure to marketing, food purchasing/sales, dietary intake), governments may need to prioritize which to monitor; collaborations with nongovernmental organizations and universities may be beneficial. To support monitoring and evaluation, policies could include provisions to make industry data available for this purpose.

The resources required for policies to protect children from the harmful impact of food marketing should be considered before the implementation of such policies. Like other interventions targeting children, policies to protect children from the harmful impact of food marketing may take considerable time to have an impact on population health *(34)*. Long-term political commitment to such policies, including resource allocation for enforcement, continued monitoring for compliance and achievement of objectives, is therefore needed if the policies are to be effective. Since policy implementation may involve ministries other than health (e.g. consumer affairs, media and communications, trade), such commitment should be across all relevant ministries.

The review of contextual factors showed that acceptability to industry of government-led policies to protect children from the harmful impact of food marketing is generally low *(34)*. Policy-makers should therefore be prepared for industry opposition, including the common arguments and tactics that industry may employ to oppose such policies. For example, industry may promote industry-initiated,

voluntary, self-regulatory policies to prevent the introduction of strong, legally enforceable government regulations *(34)*. According to the NUGAG Subgroup on Policy Actions, the experiences of countries that have successfully implemented policies to protect children from the harmful impact of food marketing can provide guidance for overcoming such opposition – for example, showing that well-designed policies do not pose substantive trade concerns.

Experience to date on the implementation of policies to protect children from the harmful impact of food marketing suggests that implementation of such policies is feasible. Given that marketing and regulatory landscapes are complex, a situation analysis of both is a useful tool for policy development; where resources are limited, a detailed situation analysis can be completed at the same time as, or after, policy implementation *(2)*. Reviewing existing laws and policies, for example, can help to identify potential legal entry points. Potentially relevant controls and agencies to include in a regulatory landscape situation analysis include public health policies, legislation and institutions; media controls and regulating authorities; child protection legislation and agencies; regulation and enforcement agencies relevant to food labelling, composition and distribution; regulations and institutions relevant to consumer protection and consumer rights; planning and zoning controls on food retailing, catering and outdoor marketing; and school regulations and education authorities *(2)*. To implement the recommendations in this guideline, countries may choose to strengthen existing policies and/or develop and implement new policies.

The considerations discussed in this section are not exhaustive, and existing global and regional implementation resources (**Box 1**) may be used and consulted when translating the recommendations in this guideline to actions.

Box 1. Additional resources for development and implementation of policies to protect children from the harmful impact of food marketing

Global

A framework for implementing the set of recommendations on the marketing of foods and non-alcoholic beverages to children (2)

Taking action to protect children from the harmful impact of food marketing: a child rights-based approach (41)

A child rights-based approach to food marketing: a guide for policy makers (72)

Regional

Monitoring and restricting digital marketing of unhealthy products to children and adolescents: report based on the expert meeting on monitoring of digital marketing of unhealthy products to children and adolescents, Moscow, Russian Federation, June 2018 (89)

Regional action framework on protecting children from the harmful impact of food marketing in the Western Pacific (90)

Tackling food marketing to children in a digital world: trans-disciplinary perspectives – children's rights, evidence of impact, methodological challenges, regulatory options and policy implications for the WHO European Region (39)

Nutrient profile models

Nutrient profile model for the marketing of foods and non-alcoholic beverages to children in the WHO Eastern Mediterranean Region (3)

Nutrient profile model for the WHO African Region: a tool for implementing WHO recommendations on the marketing of foods and non-alcoholic beverages to children (4)

Pan American Health Organization nutrient profile model (8)

WHO nutrient profile model for South-East Asia Region (5)

WHO nutrient profile model for the Western Pacific Region: a tool to protect children from food marketing (6)

WHO Regional Office for Europe nutrient profile model (7)

6 Research gaps

Based on the results of the systematic reviews, the narrative review, the review of contextual factors and the discussions of the NUGAG Subgroup on Policy Actions, a number of research gaps and considerations were identified. These will be important when updating this guideline, and for further advocacy and action to protect all children from the harmful impact of food marketing.

6.1 Overarching research gaps

Overall, most research was from HICs. High-quality studies from LMICs would enhance the representativeness of evidence underlying this guideline and provide additional information on contextual factors that may affect the implementation of policies to protect children from the harmful impact of food marketing.

Impact of food marketing

Much of the research identified in the systematic review on the impact of food marketing on children focused on proximal outcomes (e.g. food preferences, food choice or intended choice, dietary intake); few suitable studies were available for more distal outcomes (e.g. dental caries/erosion, obesity, diet-related NCDs or validated surrogate indicators) *(31)*. Long-term studies that consider the impact of food marketing on more distal outcomes would be valuable when updating this guideline. Given the substantial methodological challenges – for example, disentangling the impact of food marketing from the complex array of other factors that contribute to outcomes such as obesity and diet-related NCDs (or validated surrogate indicators) that develop gradually over time – high-quality studies on proximal outcomes will remain valuable. As well, most studies on the impact of food marketing on dietary intake focused on the impact of acute exposure to marketing on acute dietary intake; studies that consider the sustained effects of food marketing on dietary intake would also be valuable.

Much of the research on the impact of food marketing to date has also focused on food marketing via television. As the marketing landscape continues to evolve, additional research could improve the understanding of the impact of food marketing via other marketing channels (e.g. outdoor advertising, digital marketing, sponsorship), as well as on the combined effect of different types of marketing.

Additional studies on the impact of brand marketing would be beneficial in closing loopholes in some policies to restrict food marketing that permit the marketing of brands (as distinct from products and services).

Illustrative research questions related to the impact of food marketing include the following.

- What is the effect in children on habitual dietary intake, including on food-related norms and values, of habitual exposure to food marketing, compared with no marketing?
- What is the effect in children on dental caries/erosion, body weight/BMI/obesity and diet-related NCDs (or validated surrogate indicators) of exposure to food marketing, compared with no marketing?
- What is the effect in children on the outcomes of interest of exposure to food marketing via marketing channels other than television (e.g. outdoor advertising, digital marketing, sponsorship), compared with no marketing?
- What is the cumulative effect in children on the outcomes of interest of exposure to food marketing via multiple marketing channels, compared with no marketing?
- What is the effect in children on the outcomes of interest of exposure to food brand marketing, compared with no marketing?

Effectiveness of policies

As with the systematic review on the impact of food marketing on children, much of the research identified in the systematic review on the effect of policies to restrict food marketing to children focused on proximal outcomes (e.g. exposure to marketing, power of marketing); no suitable studies were available for more distal outcomes (e.g. dental caries/erosion, obesity, diet-related NCDs or validated surrogate indicators) *(32)*.

Studies on the effect of policies on more distal outcomes would be valuable when updating this guideline. The same methodological challenges discussed above apply, as well as a need to be realistic about the extent to which any one intervention can be expected to affect these outcomes on its own.

Studies included in the systematic review reported on the effect of policies on exposure to, or power of, marketing via a single marketing channel only (e.g. television, packaging). To ensure the effectiveness of policies and mitigate unintended consequences, there is a need for studies that monitor the possible migration of food marketing within one channel (e.g. from child-focused to family-focused television content) or to other marketing channels (e.g. outdoor advertising, sponsorship). Current research on the impact of policies largely focuses on changes to marketing on children's television programmes, or marketing of products of appeal to children – changes to actual exposure are a knowledge gap.

Comparative studies that include multiple countries would be beneficial when updating this guideline. Also useful would be information on the scope of current national policies and whether they cover marketing originating from sources outside a national jurisdiction.

Illustrative research questions related to the effectiveness of policies include the following.

- What is the effect in children on dental caries/erosion, body weight/BMI/obesity and diet-related NCDs (or validated surrogate indicators) of implementing a policy that aims to restrict children's exposure to food marketing and its power?
- What is the effect on marketing migration of implementing a policy that aims to restrict children's exposure to food marketing and its power?
- What is the effect on exposure of children to marketing of implementing a national policy addressing an international practice, such as digital marketing?

Contextual factors

Although the review of contextual factors found evidence that children of lower SES are more exposed to food marketing than children of higher SES, it found few studies that directly examined the impact on health equity of policies to protect children from the harmful impact of food marketing *(34)*. Future studies should therefore include data disaggregated by characteristics such as SES, sex, gender and rurality (see "Considerations for the design of future evaluations").

During the discussions of the NUGAG Subgroup on Policy Actions, an expert noted that, in some countries, there may be concerns that prohibition of sponsorship of children's sport might reduce children's opportunity to play sport. The review of contextual factors found some evidence related to this – for example, an impact assessment of a draft policy that included restrictions on sponsorship of children's events noted a possible "public outcry" if events stopped following funding limitations resulting from restrictions on marketing *(34)*. Further research on the acceptability and feasibility of restrictions on sports sponsorship would be beneficial.

Illustrative research questions related to contextual factors include the following.

- What is the impact on health equity of policies to protect children from the harmful impact of food marketing?
- What is the acceptability and feasibility of policies to protect children from the harmful impact of food marketing that include restrictions on sponsorship, including sports sponsorship?

6.2 Considerations for the design of future evaluations

For many of the outcomes of interest in the systematic reviews on the impact of food marketing on children *(31)* and the effect of policies to restrict food marketing to children *(32)*, the certainty of the evidence was low or very low. The certainty of the evidence was often downgraded because of a serious or very serious risk of bias in the included studies, or serious or very serious inconsistency of effect. The certainty of the evidence could be improved by ensuring that future studies address common issues related to risk of bias – for example, for studies on the impact of food marketing on children, not providing information on non-respondents or not controlling for confounding factors. The inconsistency of effect for studies on the impact of policies to restrict food marketing also reflects differences in study design, sampling approach and effect measure *(32)*. Use of standardized monitoring procedures could potentially reduce the inconsistency of effect between studies and thereby improve the certainty of the evidence. A diverse array of tools has been used in research that assesses the extent of policy implementation, and implementation processes for food environment policies *(39)*. Although guidance on appropriate study designs and methods for policy evaluation remains limited, results from current research projects can be used to strengthen policy evaluations *(40)*. Potential standardized monitoring procedures include those proposed by the WHO Regional Office for Europe *(91)* and the International Network for Food and Obesity/Non-Communicable Diseases Research, Monitoring and Action Support (INFORMAS) *(92)*. As the use of digital marketing (including programmatic advertising and user-generated content) increases, tools for monitoring such marketing, such as the CLICK tool for monitoring digital food marketing developed by the WHO Regional Office for Europe *(89)*, should also be considered.

A number of studies in the systematic review on the effect of policies to restrict food marketing lacked effect estimates and/or *P* values. This prevented pooled analysis (*93)*; instead, vote counting based on direction of effect was used, which provided no information on the magnitude of effect and did not account for differences in the relative size of included studies *(93)*. Future studies should include effect estimates and *P* values.

In both systematic reviews, analyses by SES, sex, gender and rurality were not possible, because data on these characteristics were either reported by too few studies for each outcome or not reported by exposure groupings. Where possible, future studies should include data disaggregated by these characteristics to enable analysis of the impact on health equity of food marketing and of policies to protect children from its harmful impact.

Other considerations for the design and reporting of future evaluations of policies to restrict food marketing include a need for more detailed information on policies (e.g. enforcement mechanisms); this would allow greater examination of policy design elements that may impact effectiveness.

Implementation research addresses both policy implementation processes and relevant contextual factors *(94)*. Integrating implementation research into policy and programmatic decision-making processes from the start can support collaboration between policy implementers and researchers to ensure that such research is useful *(94)*. Qualitative comparative analysis can provide further insights into regulatory governance conditions that lead to food environment policies that can improve population nutrition outcomes *(88)*. Systems thinking can be useful in generating robust evidence about which policies are the most effective; this applies to the policy-making process, problem identification and policy analysis, and, once a policy is implemented, policy evaluation *(95)*.

7 Guideline dissemination, implementation and evaluation

This guideline will be disseminated through the networks of WHO regional offices and country offices, WHO collaborating centres, UN partner agencies and civil society agencies, relevant nutrition webpages on the WHO website[35] and the electronic mailing lists of the WHO Department of Nutrition and Food Safety, among others. The guideline will also be disseminated at relevant global, regional and national meetings.

The impact of this guideline can be evaluated by assessing its adoption and adaptation across countries. Evaluation at the global level will be through the WHO Global database on the Implementation of Nutrition Action (GINA)[36] and the WHO NCD Country Capacity Survey. GINA is a centralized platform developed by the WHO Department of Nutrition and Food Safety for sharing information on nutrition actions in public health practice implemented around the world. GINA currently contains information on thousands of policies (including legislation), nutrition actions and programmes in more than 190 countries. It includes data and information from many sources, including the first and second WHO global nutrition policy reviews conducted in 2009–2010 and 2016–2017, respectively *(23, 96)*. By providing programmatic implementation details, specific country adaptations and lessons learned, GINA serves as a platform for monitoring and evaluating how policy guidelines are being translated and adapted in various countries. The WHO NCD Country Capacity Survey is a global survey of all Member States that provides a periodic assessment of national capacity for NCD prevention and control, including in a number of nutrition-related areas.

[35] http://www.who.int/nutrition/en/
[36] http://www.who.int/nutrition/gina/en/index.html

8 Updating the guideline

In line with the *WHO handbook for guideline development (30)*, the recommendations in this guideline will be regularly updated, based on new data and information. The WHO Department of Nutrition and Food Safety will be responsible for coordinating updates of the guideline, following the formal procedure described in the *WHO handbook for guideline development (30)*. When the guideline is due for review, WHO will welcome suggestions for additional questions that could be addressed in the guideline.

If there are concerns that one or more recommendations in the guideline may no longer be valid, the Department of Nutrition and Food Safety will communicate this information, together with plans to update the guideline, to relevant actors via announcements on the Department of Nutrition and Food Safety website, eLENA, and the Department of Nutrition and Food Safety electronic mailing lists, as well as communicating directly with actors, as necessary.

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Annex 1: WHO Secretariat

[List to be inserted before finalization]

Annex 2: Members of the WHO Steering Committee (Headquarters)

[List to be inserted before finalization]

Annex 3: Members of the WHO Nutrition Guidance Expert Advisory Group (NUGAG) Subgroup on Policy Actions

[List to be inserted before finalization]

Annex 4: External resource people

[List to be inserted before finalization]

Annex 5: External peer review group

[List to be inserted before finalization]

Annex 6: Evidence to decision: summary of judgements

Should a policy to restrict food marketing versus no policy be used to protect children from the harmful impact of food marketing?

Characteristic of policy	Question	Judgement	Rationale
Desirable effects	How substantial are the desirable anticipated effects?	Moderate	*Research evidence* Systematic reviews provided evidence of the impact of food marketing on children *(31)* and of the effect of policies to restrict food marketing to children *(32)*. *Additional considerations* The WHO NUGAG Subgroup on Policy Actions noted the following. • Interventions included in the evidence varied greatly in scope and focus. Whether the desirable effects are substantial is very context-dependent. In line with the outcomes of the systematic reviews, experts emphasized that the effects of the intervention depend on policy design elements (i.e. the regulatory instrument used, definition of the target group, approach to determining foods restricted from marketing), and resources and capacity to effectively implement the policy. • Most evidence is from HICs, but it is unlikely that the effects of the intervention would be substantially different in LMICs. • As food environment policies are complex interventions, with myriad factors influencing the outcomes of interest, there is a need to be realistic about the extent to which any one intervention can be expected to affect the more distal outcomes of interest on its own.
Undesirable effects	How substantial are the undesirable anticipated effects?	Trivial	*Research evidence* Systematic reviews provided evidence of the impact of food marketing on children *(31)* and of the effect of policies to restrict food marketing to children *(32)*.

			Additional considerations The WHO NUGAG Subgroup on Policy Actions noted the following. • In assessing undesirable effects, the focus should be on health effects. No undesirable effects on health outcomes of implementing policies to restrict food marketing were identified in the reviews. • Policies that are too narrowly defined could have undesirable effects, including: o migration of marketing to other channels; o migration of marketing to other spaces within the same channel or to other age groups; and o risk of increased brand marketing.
Certainty of evidence	What is the overall certainty of the evidence of effects?	Very low	*Research evidence* Systematic reviews provided evidence of the impact of food marketing on children *(31)* and of the effect of policies to restrict food marketing to children *(32)*. *Additional considerations* The WHO NUGAG Subgroup on Policy Actions noted the following. • There was a high level of heterogeneity in the evidence. The inconsistency of effect was likely to be partly due to variation in policy design elements (i.e. the regulatory instrument used, definition of the target group, approach to determining foods restricted from marketing). • Relevant policy evaluations will be observational studies, leading to lower certainty of evidence when applying the GRADE system.
Values	Is there important uncertainty about, or variability in, how much people value the main outcomes?	Probably no important uncertainty or variability	*Research evidence* A review of contextual factors provided contextual information, and a narrative review provided additional information on the nature and extent of marketing *(33)* relevant to policies to protect children from the harmful impact of food marketing, including with regard to values on health outcomes *(34)*. *Additional considerations*

			The WHO NUGAG Subgroup on Policy Actions noted: • the importance of valuing children's health and the need to protect the health of the vulnerable; and • the role of governments in enabling healthful decision-making.
Balance of effects	Does the balance between desirable and undesirable effects favour the intervention or the comparison?	Probably favours the intervention	*Research evidence* Systematic reviews provided evidence of the impact of food marketing on children *(31)* and of the effect of policies to restrict food marketing to children *(32)*. *Additional considerations* Although no undesirable effects of restricting food marketing were identified, the effects of the intervention depend on policy design elements and contextual factors.
Resources required	How large are the resource requirements (costs)?	Moderate costs	*Research evidence* A review of contextual factors provided contextual information relevant to policies to protect children from the harmful impact of food marketing, including with regard to resources required *(34)*. *Additional considerations* The WHO NUGAG Subgroup on Policy Actions noted the following. • The costs considered should be costs to government and not costs to other actors (e.g. industry). • The costs should be considered in the context of, and relative to, total government expenditure on health and preventive health. • Some countries have underestimated the resources required. • Both one-off costs (policy drafting and enactment) and ongoing costs (e.g. enforcement and ongoing monitoring) should be considered.
Cost-effectiveness	Does the cost-effectiveness of the intervention favour the intervention or the comparison?	Favours the intervention	*Research evidence* A review of contextual factors provided contextual information relevant to policies to protect children from the harmful impact of food marketing, including with regard to cost-effectiveness *(34)*. *Additional considerations*

			The WHO NUGAG Subgroup on Policy Actions noted that much of the evidence was based on modelling.
Equity	What would be the impact on health equity?	Probably increased	*Research evidence* A review of contextual factors provided contextual information, and a narrative review provided additional information on the nature and extent of marketing *(33)* relevant to policies to protect children from the harmful impact of food marketing, including with regard to equity *(34)*. *Additional considerations* The WHO NUGAG Subgroup on Policy Actions noted the following. • Research, mainly from HICs, shows that children of lower SES are more exposed to food marketing than children of higher SES, which can lead to or worsen health inequities. • Low agency public health interventions are likely to increase health equity.
Human rights	What would be the impact on human rights?	Increased	*Research evidence* A review of contextual factors provided contextual information, and a narrative review provided additional information on the nature and extent of marketing *(33)* relevant to policies to protect children from the harmful impact of food marketing, including with regard to human rights *(34)*. *Additional considerations* The WHO NUGAG Subgroup on Policy Actions noted the following. • Children's rights are an important consideration for country action to restrict marketing. New marketing channels and techniques, particularly digital marketing, are of increasing concern. • Current safeguarding mechanisms permitting advertising in the digital space (e.g. "age appropriate" YouTube videos) are unlikely to work in practice. • Additional challenges arise with increased digital marketing, including respecting the right to privacy.
Acceptability	Is the intervention acceptable to key actors?	Varies	*Research evidence*

			A review of contextual factors provided contextual information relevant to policies to protect children from the harmful impact of food marketing, including with regard to acceptability *(34)*. *Additional considerations* The WHO NUGAG Subgroup on Policy Actions noted the following. • Generally, policies are acceptable to government, policy-makers and the public, but less so to industry. • Acceptability to industry depends on the type of policy proposed. It is generally negative for mandatory policies and greater for voluntary policies. • Acceptability to government may vary between ministries. This could relate to industry being a core stakeholder for certain ministries (e.g. industry, commerce, communications), and also to concerns about potential economic impacts on related sectors. • Most evidence is from HICs. It is unclear whether acceptability would be different in LMICs. • Acceptability might decrease if food marketing restrictions increase the cost of food in the long term.
Feasibility	Is the intervention feasible to implement?	Yes	*Research evidence* A review of contextual factors provided contextual information relevant to policies to protect children from the harmful impact of food marketing, including with regard to feasibility *(34)*. *Additional considerations* The WHO NUGAG Subgroup on Policy Actions noted the following. • Countries that have successfully implemented policies have set a precedent that shows that policies are feasible to implement and that well-designed policies do not pose substantive trade concerns. • The nutrient profile models developed by the WHO regional offices can be adapted by countries; they help determine foods to be restricted from marketing and may increase feasibility. • Industry influence may be a barrier to implementation of effective policies to restrict food marketing.

			• Providing clear guidance to countries may remove fears of complexity and increase feasibility.

Annex 7: Key characteristics of policies evaluated by studies included in the systematic review of effects of policies to restrict food marketing to children

Policy name	Jurisdiction (date implemented)	Policy type	Definition of child in policy	Targeted products		Exposure		Power
				Target foods and beverages	Criteria/model used to define	Restricted communications, channels and settings	How are child-directed communications, media, ads and settings defined?	How are marketing techniques defined and restricted?
Australian Children's Television Standards	Australia (1984)	Mandatory	6–13 years	All foods and drinks	Not reported	TV	Placement: programmes and advertisements shown during designated "C" programmes (those specifically produced for children 6–13 years of age)	Regulates (does not prohibit) use of promotions, popular characters and premium offers promoted to children in advertisements for food: "If a premium is offered, any reference to the premium must be incidental to the main product or service advertised". Premiums are defined as anything offered with or without additional cost that is intended to induce the purchase of an advertised product or service.
Australian Food and Grocery Council's Responsible Marketing to Children Initiative	Australia (January 2009)	Voluntary	<12 years	Those not representing healthier choices as per established scientific or Australian Government standards	Company-specific nutrition standards	TV, radio, print, cinema, third-party internet sites	Audience: media "where the audience is predominantly children and/or the media or communication activities are directed primarily to children"	Popular personalities and licensed characters (defined as a character from a "C" (children's) or "P" (preschool children's) programme, other programme or movie and all non-copyright cartoons) may only be used to promote healthier dietary choices. Premium offers may only be used if premium is incidental to food product advertised.
Australian Food and Grocery Council's Australian Quick	Australia (August 2009)	Voluntary	<14 years	Those not representing healthier	Defined set of nutrition criteria for assessing	TV, radio, newspaper, magazines, outdoor	Medium that is directed primarily to children and/or where children represent 35% or more of	Not reported

Policy name	Jurisdiction (date implemented)	Policy type	Definition of child in policy	Targeted products		Exposure		Power
				Target foods and beverages	Criteria/model used to define	Restricted communications, channels and settings	How are child-directed communications, media, ads and settings defined?	How are marketing techniques defined and restricted?
Service Restaurant Industry Initiative				choices as per established scientific or Australian Government standards	children's meals	billboards and posters, emails, interactive games, cinema, internet sites	the audience of the medium. In relation to television, media directed primarily to children include all "C" (children's) and "P" (preschool children's) rated programmes and other rated programmes that are directed primarily to children through their themes, visuals and language.	
Canadian Children's Food and Beverage Advertising Initiative	Canada (introduced 2007, fully implemented by 2008)	Voluntary	<12 years	Non–"healthier dietary choices"	Uniform nutrition criteria: company-specific nutrition standards	TV, radio, print, internet	Audience and placement: company-owned websites/microsites primarily directed to children <12 years; video/computer games rated "Early Childhood (EC)"; DVDs of movies rated "G" whose primary content is primarily directed to children <12 years, and other DVDs whose content is primarily directed to children <12 years; mobile media (phones, tablets, personal digital devices) where advertising on those media is primarily directed to children <12 years	Licensed characters, celebrities, movie tie-ins, use of products in interactive games, product placement
Children's Food and Beverage Advertising Initiative	USA (introduced 2007, fully	Voluntary	<12 years	Non–"better for you" products	Uniform nutrition criteria	TV, radio, print, internet/digital media	Audience and setting: settings where children make up 35% minimum of the audience; elementary	Influencer communications, product placements, licensed characters, celebrities, movie tie-ins and word of mouth.

Policy name	Jurisdiction (date implemented)	Policy type	Definition of child in policy	Targeted products		Exposure		Power
				Target foods and beverages	Criteria/model used to define	Restricted communications, channels and settings	How are child-directed communications, media, ads and settings defined?	How are marketing techniques defined and restricted?
	implemented by 2009)						schools (entire school, facilities and grounds, and covering the entire school day)	Word-of-mouth advertising refers to "advertising primarily directed to children under age 12 where a participant provides incentives, (financial or otherwise), product samples or other support to individuals or groups who are not employees to encourage such individuals or groups to discuss the company's branded foods or beverages".
Chile Food Labelling and Advertising Regulation ("Super 8 Law")	Chile (2016, updated 2018)	Mandatory	<14 years	"High in" products	Uniform nutrition criteria: thresholds set by the Chilean Ministry of Health	TV, websites, schools, packaging	Time, placement, audience, and setting: all TV broadcast from 6:00 hours to 22:00 hours. Outside these hours, TV broadcast on devoted children's channels, during programmes targeting children, or when child audience is >20% (except during sports, cultural, artistic or charity events, if certain criteria are met). Also included are websites targeting children or those with child audience of >20%; and preschools, primary schools and secondary schools.	Prohibits, in any marketing for regulated products, use of the following: celebrities, characters, cartoons (including brand equity); toys; stickers; animations; children's music; people/animals that capture children's interest; fantastic statements about product or its effects; situations representing children's daily life; children's expressions or language; interactive contests, games or applications; or "hooks" unrelated to the product itself
EU Pledge	European Union (EU; introduced 2007, uniform nutrition criteria	Voluntary	<12 years	Those primarily directed to children under 12 that do not meet	Company-specific nutrition standards	TV, radio, cinema, print, outdoor marketing, internet, mobile apps, social	Audience, placement and setting: no advertising to media audiences with >35% of children <12 years (from 2012; previously 50%), except for products that meet nutrition criteria	Prohibits advertising of products that do not meet common nutrition criteria to children under 12 years old

Policy name	Jurisdiction (date implemented)	Policy type	Definition of child in policy	Targeted products		Exposure		Power
				Target foods and beverages	Criteria/model used to define	Restricted communications, channels and settings	How are child-directed communications, media, ads and settings defined?	How are marketing techniques defined and restricted?
	adopted 2014)			specific nutrition criteria		networking websites, influencer marketing, interactive games, schools	(company-specific). No communication related to products in primary schools, except where specifically requested by, or agreed with, the school administration for educational purposes. Since 2012, internet advertising has been extended to include company-owned websites, in addition to third-party advertising.	
European and Spanish public health laws	Spain (July 2011)	Mandatory	<15 years	Not reported	Not applicable	TV and other "food publicity"	Not reported	Not applicable
Mexican self-regulation (Código de Autorregulación de Publicidad de Alimentos y Bebidas No Alcohólicas dirigida al Público Infantil)	Mexico (2009)	Voluntary	<12 years	No specific targets but, to be permitted, advertisements must "promote healthy lifestyle habits, based on a proper diet and active lifestyle"	Not reported	TV, radio	Audience, placement and setting: applies to schedules and programmes predominantly aimed at children (without further specification). Defined as child directed if the product or packaging and/or the advertisement (through themes related to fantasy, mystery or adventure, or use of colourful characters and gifts) aims to appeal to children, and/or when an advertisement is broadcast on children's programming, or when a child audience reaches a	Does not prohibit use of persuasive techniques

Policy name	Jurisdiction (date implemented)	Policy type	Definition of child in policy	Targeted products		Exposure		Power
				Target foods and beverages	Criteria/model used to define	Restricted communications, channels and settings	How are child-directed communications, media, ads and settings defined?	How are marketing techniques defined and restricted?
							pre-established minimum level.	
Quebec Consumer Protection Act	Quebec, Canada (1980)	Mandatory	<13 years	Those designed for primary appeal to children	Any product consumed primarily by children	All commercial advertising directed at children	Audience: child directed when children make up >15% of audience	Use of characters or themes designed to elicit the interest of children
San Francisco Healthy Food Incentives Ordinance	San Francisco, USA (December 2011)	Mandatory	Not reported	Those not meeting nutrition criteria	Uniform nutrition criteria	Fast-food restaurants in San Francisco	Settings: applies to all fast-food restaurants	Free toys or incentives (games, trading cards or other consumer products)
Singapore Code of Advertising Practice	Singapore (January 2015)	Voluntary	<12 years	Those not meeting nutrition criteria	Uniform nutrition criteria: determined by the Health Promotion Board	All media	Not reported	Diet and lifestyle messaging: should not encourage unhealthy or excessive eating, or undermine role of caregivers as guides for children's dietary choices
Special Act on Safety Management of Children's Dietary Life	Republic of Korea (September 2010)	Mandatory	4–18 years	Food products favoured by children as snacks or meal substitutes that do not satisfy the nutrition criteria	Uniform nutrition criteria: determined by Korean Food and Drug Administration	TV	Not reported	Not reported
UK content and scheduling (Ofcom) restrictions	UK (April 2007 – January 2009)	Mandatory	<16 years	Those high in fats, sugar or salt	UK Food Standards Agency Nutrient Profiling Model	TV	Placement and audience: broadcasting during children's programmes or when proportion of viewers aged 4–15 years is 20% higher than in the general population	Promotional offers, nutritional and health claims, licensed characters, celebrities; techniques regulated by UK Code of Broadcast Advertising that are calculated to appeal to children aged 4–16