

**The extent, nature and potential impact of food company sponsorship of children's sports
in two policy environments in Canada**

Elise Pauzé

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Population Health Program
Interdisciplinary School of Health Sciences
Faculty of Health Science
University of Ottawa

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Abstract

Exposure to unhealthy food marketing is a known determinant of children's poor dietary behaviours. This research sought to 1) assess the extent and nature of children's exposure to food marketing stemming from the sponsorship of their sporting activities and 2) examine the benefits that sports clubs derive from this sponsorship in Canada's two policy environments, namely Quebec, where commercial advertising directed to children under 13 years is restricted, and other provinces, where food advertising is self-regulated by the food industry.

Broadly, two online surveys found that a large share of children (40-67%) aged 10-17 years who played on a sport team recalled being exposed to food advertising in amateur sports settings. In both surveys, children in Quebec were less likely to report exposure to food advertising on their sports equipment than children living in other provinces. However, differences among children aged 10-12 years protected by Quebec's advertising restrictions compared to older children in the province were not statistically significant. Differences in reported exposure to most other types of food advertising (e.g. branded sports awards, free food, coupons) among children living in Quebec compared to those in other provinces and among Quebecois children protected versus not protected by provincial restrictions were also not found to be statistically significant. Correspondingly, a telephone survey with a small sample of children's sports clubs found that at least 45% of those surveyed in Ontario (21/47) and 55% in Quebec (22/40) were sponsored by a food company, most frequently fast-food restaurants. Sports clubs received funding and in-kind benefits such as free food, uniforms and medals. For most clubs, this funding and the perceived value of in-kind benefits was small relative to the club's total revenue. In both provinces, food company sponsors, particularly fast-food restaurants, were reported as being promoted on uniforms, sports equipment, and sports awards, more often on those for children aged 12 years and under.

Overall, these findings suggest amateur sports settings constitute an important source of exposure to food marketing among children. Quebec's advertising restrictions are not adequately limiting children's exposure to sponsorship-related food marketing, including prominent forms (e.g. branded uniforms) that reach children under 13 years. The food industry's self-regulatory code also does not limit many forms of sponsorship-related marketing that were reported. Policymakers should consider adopting statutory restrictions on the sponsorship of children's sports by food companies associated with unhealthy products.

Résumé

L'exposition à la publicité pour des aliments malsains est un déterminant des mauvaises habitudes alimentaires chez les enfants. Cette recherche visait à 1) évaluer la portée et la nature de l'exposition des enfants à la publicité alimentaire découlant de la commandite de leurs activités sportives et 2) examiner les avantages que les clubs sportifs tirent de cette commandite dans deux contextes réglementaires canadiens, soit au Québec, où la publicité commerciale destinée aux enfants de moins de 13 ans est restreinte, et dans les autres provinces, où la publicité alimentaire est autoréglementée par l'industrie alimentaire.

En général, deux sondages en ligne ont révélé qu'un fort pourcentage d'enfants (de 40 à 67 %) âgés de 10 à 17 ans qui faisaient partie d'une équipe sportive ont rapporté avoir été exposés à de la publicité alimentaire dans le cadre de leurs activités sportives. Selon ces deux sondages, les enfants habitant au Québec étaient moins susceptibles de déclarer avoir été exposés à de la publicité alimentaire sur leur équipement sportif que les enfants vivant dans d'autres provinces. Toutefois, les différences observées entre les enfants âgés de 10 à 12 ans protégés par les restrictions publicitaires du Québec et les enfants plus âgés de la province n'étaient pas statistiquement significatives. De même, les différences d'exposition déclarée à la plupart des autres types de publicité alimentaire (p. ex., prix sportif faisant la promotion d'une marque, aliments gratuits, coupons) entre les enfants du Québec et ceux des autres provinces, ainsi qu'entre les enfants québécois protégés et non protégés par les restrictions provinciales, n'étaient pas statistiquement significatives. Parallèlement, un sondage téléphonique mené auprès d'un petit échantillon de clubs sportifs pour enfants a révélé qu'au moins 45 % des clubs interrogés en Ontario (21/47) et 55 % au Québec (22/40) étaient commandités par une entreprise alimentaire, le plus souvent des chaînes de restauration rapide. Ces clubs recevaient du financement et des avantages en nature, comme des aliments gratuits, des uniformes et des médailles. Pour la plupart des clubs, ce financement et la valeur perçue des avantages en nature étaient faibles par rapport à leurs revenus totaux. Dans les deux provinces, les commanditaires, notamment les chaînes de restauration rapide, étaient mis de l'avant sur les uniformes, l'équipement sportif et les prix sportifs, plus souvent sur ceux destinés aux enfants de 12 ans et moins.

Dans l'ensemble, ces résultats suggèrent que les milieux sportifs amateurs constituent une source importante d'exposition des enfants à la commercialisation alimentaire. Les restrictions

publicitaires du Québec ne limitent pas suffisamment l'exposition des enfants à la commercialisation alimentaire liée à la commandite, y compris aux formes particulièrement visibles (p. ex., les uniformes faisant la promotion de marque) qui atteignent les enfants de moins de 13 ans. Le code d'autoréglementation de l'industrie alimentaire ne restreint pas non plus plusieurs formes de commercialisation alimentaire liées à la commandite qui ont été rapportées. Les décideurs politiques devraient envisager l'adoption de restrictions limitant la commandite des activités sportives des enfants par des entreprises alimentaires associées à des produits malsains.

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List of abbreviations

AAPOR	American Association of Public Opinion Research
AOR	Adjusted odd ratios
CAD	Canadian dollar
CAI	Canadian Children's Food and Beverage Advertising Initiative
CCHS	Canadian Community Health Survey
CDOH	Commercial determinants of health
CDRR	Chronic disease risk reduction
CI	Confidence interval
CIHR	Canadian Institutes of Health Research
CPA	Consumer Protection Act
FSR	Full-service restaurant
IFPS	International Food Policy Study
IQR	Interquartile range
LSR	Limited-service restaurants
ON	Ontario
OR	Odd ratios
QC	Quebec
SED	Socio-economic disadvantage
SES	Socio-economic status
SSB	Sugar-sweetened beverages
Ref	Reference category

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Introduction

Unhealthy food marketing, which pervades the daily lives of children in Canada, is a well-established driver of children's poor dietary patterns which is undermining their short- and long-term health. Broadly, this research examines the extent and nature of the food marketing stemming from the sponsorship of children's sport, which to date has been understudied in Canada. Specifically, the purpose of this work was to 1) estimate the prevalence of children's exposure to food marketing in amateur sports settings and characterize this exposure, 2) explore whether this type of marketing may disproportionately reach some child subpopulations, and 3) assess whether current policies in Canada are adequately protecting children from exposure to this type of food marketing. The first chapter of this thesis summarizes the relevant literature and theory underpinning this research and describes the study rationale and objectives. The research methods and results are presented as three manuscripts in Chapter 2, and an integrated discussion of all three studies and conclusions are presented in Chapter 3.

Chapter 1. Background

1.1 Children's diet and nutritional health

1.1.1 Children's diet quality

Globally the diet of most children can be characterized as unhealthy (Miller et al., 2022). Similarly, in Canada, studies analyzing the most recent nationally representative dietary intake data collected by the Canadian Community Health Survey (CCHS) in 2015 have found the diet of children is generally poor and incongruent with dietary recommendations (Bernstein et al., 2023; Olstad et al., 2021; Polsky & Garriguet, 2020; Smith et al., 2021). For instance, most (61-94%) children aged 3 to 18 years in Canada did not consume enough fruit and vegetables relative to the number of servings recommended by the 2004 food guide for their sex and age group (Polsky & Garriguet, 2020). Conversely, ultra-processed foods, which are often low in micronutrients and fibre and high in saturated fats, sugars and/or sodium, accounted for 48-53% of the calories consumed by children aged 3-18 years in 2015 (Polsky et al., 2020).

Although children's intake of sugary drinks (i.e. sugar-sweetened drinks and 100% fruit juice) has decreased over time, their consumption remained high in 2015 with children aged 1 to 8 and 9 to 18 years consuming an average of 130 and 206 calories, respectively, from these beverages daily (Jones et al., 2019). On any given day, 13-20% of children aged 6 to 18 years in 2015 also consumed foods from restaurants (Polsky et al. 2020). Notably, children who consumed food away from home were found to have a lower intake of whole fruit, dark green and orange vegetables, whole grains, protein and fibre, and a higher intake of total fat and sodium, depending on the subgroup, compared to children who did not eat out (Polsky & Garriguet, 2021).

Considering these dietary patterns, it is not surprising that most children in Canada exceeded recommended intakes for certain nutrients of public health concern (Bernstein et al., 2023; Smith et al., 2021). Specifically, 63-89% of children aged 2 to 18 years exceeded the chronic disease risk reduction (CDRR) threshold for sodium for their age group in 2015 (Smith et al., 2021) and 70-75% consumed more than the daily recommended intake for free sugars (i.e. no more than 10% of total a caloric intake) (Bernstein et al., 2023).

1.1.2 Social disparities in dietary intake

Research has found that poor diet is generally not experienced equally across populations and dietary disparities are often socially patterned (Carrillo-Alvarez et al., 2025; Miller et al., 2022). Such is also the case among children in Canada. Some indicators of diet quality and/or food and nutrient intake among children in Canada have been shown to vary based on sex (Smith et al., 2021; Warren et al., 2022), age (Jones et al., 2019; Polsky & Garriguet, 2020, 2021; Smith et al., 2021), indicators of socio-economic position (Hutchinson & Tarasuk, 2022; Olstad et al., 2021; Smith et al., 2021; Warren et al., 2022) and race/ethnicity (Riediger et al., 2022). Available data from the 2015 CCHS survey on children's dietary intake by age and sex are summarized in **Table 1**.

Differences by sex/gender

Some evidence suggests male children have poorer diets than their female counterparts. While the consumption of fruit and vegetables and ultra-processed foods were similar between male and female children in 2015 relative to dietary recommendations or their total caloric intake (Polsky et al., 2020; Polsky & Garriguet, 2020), male children consumed more sodium (Smith et al., 2021) and sugary drinks (Warren et al., 2022), on average, than female children. Despite the disparity in sugary drink consumption, the prevalence of children who exceeded the daily recommended intake for free sugars was similar between males and females (Bernstein et al., 2023).

Differences by age group

In terms of age differences, children aged 9 years and over or 12 years and over were more likely to consume foods from restaurants and were less likely to eat enough eat fruit and vegetables than younger children (Polsky & Garriguet, 2020, 2021). They also consumed a greater number of calories from sugary drinks (Jones et al., 2019). Children's average daily intake of sodium, which exceeded the CDRR threshold, also increased with age, particularly among male children (Smith et al., 2021).

Table 1: Data on children’s food and nutrient intake by age and sex based on analyses of 24-hour dietary recalls from the 2015 Canadian Community Health Survey.

	Statistic	Male	Female	Total
Fruit and vegetable intake (Polsky & Garriguet, 2020)	Percentage of children aged 4-8 yrs who did not consume the recommended # of servings of fruit and vegetables			72.9%
	Percentage of children aged 9-13 yrs who did not consume the recommended # of servings of fruit and vegetables	84.9%	89.6%	
	Percentage of children aged 14-18 yrs who did not consume the recommended # of servings of fruit and vegetables	90.3%	93.8%	
Ultra-processed food (Polsky et al., 2020)	Average % of total daily calories derived from ultra-processed foods among children aged 2-5 yrs			48.0% (95% CI: 46.1; 49.9)
	Average % of total daily calories derived from ultra-processed foods among children aged 6-12 yrs			53.0% (95% CI: 51.9; 54.2)
	Average % of total daily calories derived from ultra-processed foods among children aged 13-18 yrs	50.4% (95%CI: 48.5; 52.4)	53.2% (95%CI: 48.5; 52.4)	
Sugary drink intake (Jones et al., 2019; Warren et al., 2022)	Average daily intake of calories from sugar-sweetened beverages (SSB) and fruit juice among children aged 1-8 yrs			SSB: 74.0 kcal /day (95% CI: 66.4,81.6) 100% fruit juice: 56.3 kcal /day (95% CI: 51.4, 61.3)
	Average daily intake of calories from sugar-sweetened beverages (SSB) and fruit juice among children aged 9-18 yrs			SSB: 152.0 kcal/day (95% CI: 141.0, 163.0) 100% fruit juice: 54.5 kcal /day (95% CI: 49.9, 59.1)
	Prevalence of children aged 2-18 yrs who consume sugary drinks on any given day	78% (95% CI: 75, 80)	72% (95% CI: 68, 75)	
	Average intake of calories from sugary drinks among children aged 2-18 yrs who consume these beverages	252 kcal (95% CI: 234, 270)	211 kcal (95% CI: 200, 223)	
Restaurant food (Polsky & Garriguet, 2021)	Percentage of children aged 6-12 yrs who consumed food from any restaurants, limited-service restaurants (LSR) and full-service restaurant (FSR) on any given day			Any: 12.8% LSR: 7.7% FSR: 5.9%
	Percentage of children aged 13-18 yrs who consumed food from any restaurants, limited-service restaurants (LSR) and full-service restaurant (FSR) on any given day	Any: 20.2% LSR: 15.1% FSR: 7.2%	Any: 21.4% LSR: 13.9% FSR: 8.9%	
Sodium (Smith et al., 2021)	Prevalence of children aged 2-8 yrs who exceeded the chronic disease risk reduction (CDRR) threshold for their age group (i.e. 1500 mg/day)			89% (95%CI: 83, 94)
	Prevalence of children aged 9-18 yrs who exceeded the CDRR threshold for their age group (i.e. 2300 mg/j)	87% (95% CI: 82; 93)	63% (95% CI: 57; 70)	

	Average daily intake of sodium among children aged 4-8 yrs			2,297 mg/day (2,224, 2,370)
	Average daily intake of sodium among children aged 9-13 yrs	2,959 mg/day (95%CI: 2,867, 3,052)	2,579 mg/day (95%CI: 2,505, 2,652)	
	Average daily intake of sodium among children aged 14-18 yrs	3,323 mg/day (95%CI: 3,096, 3,551)	2,460 mg/day (95%CI: 2,280, 2,640)	
Free sugars (Bernstein et al., 2023)	Prevalence of children aged 4-8 yrs who consume more than 10% of their daily calories on free sugars			74.9%
	Prevalence of children aged 9-13 yrs who consume more than 10% of their daily calories on free sugars	71.6%	74.4%	
	Prevalence of children aged 14-18 yrs who consume more than 10% of their daily calories on free sugars	69.9%	71.4%	
	Average percentage of daily calories derived from free sugars among children 4-8 yrs			13.9%
	Average percentage of daily calories derived from free sugars among children 9-13 yrs	13.3%	14.0%	
	Average percentage of daily calories derived from free sugars among children 14-18 yrs	13.0%	13.6%	

Notwithstanding, the percentage of calories from ultra-processed foods and free sugars and the prevalence of children who consumed more than 10% of their calories from free sugars was similar across age groups, irrespective of sex (Bernstein et al., 2023; Polsky et al., 2020).

Differences by socio-economic position

Social-economic gradients in diet quality or nutrient intake by indicators of socio-economic position have also been identified (Hutchinson & Tarasuk, 2022; Olstad et al., 2021; Smith et al., 2021; Warren et al., 2022). Children's overall diet quality, as measured by the 2015 Healthy Eating Index Score, was lower among children of lower socio-economic position based on household educational attainment, neighbourhood deprivation and household income (Olstad et al., 2021). Children from food insecure households in 2015 were also found to get a larger share of their calories from ultra-processed foods than their food secure counterparts though no differences in overall diet quality and fruit and vegetable intake by food security status was observed (Hutchinson & Tarasuk, 2022). Socio-economic gradients in sugary drink and sodium intake have also been noted among some child subpopulations (Smith et al., 2021; Warren et al., 2022). Among girls aged 2-18 years, the prevalence of sugary drink consumption was found to be greater among those from households with lower parental education (Warren et al., 2022). Mean sodium intake was also found to be higher among children aged 2 to 8 years in food insecure households and those of lower education than their respective counterparts (Smith et al., 2021).

Differences by race/ethnicity

There is little research analyzing CCHS data that has examined disparities in diet between children of different races/ethnicities. One study combining and analyzing CCHS data from 2004 and 2015 suggested some indigenous children, particularly First Nations, had poorer diet quality as measured by the Healthy Eating Index compared to their non-Indigenous counterparts, likely owing to their heightened risk of experiencing of food insecurity (Riediger et al., 2022). Notably, differences in diet quality reported in this study was small (i.e. <5 points) and may not be considered clinically meaningful (Kirkpatrick et al., 2018; Riediger et al., 2022).

1.2 Impact of poor diet on population health

Poor dietary patterns, including the excessive consumption of nutrients of public health concern like sodium, free sugars and saturated fats, have detrimental effects on population health (Health

Canada, 2018a). Notably, poor diet and excessive caloric intake contribute to the development of childhood obesity (Kumar & Kelly, 2017). Obesity is a risk factor for several negative physical and mental health outcomes among children including type II diabetes, increased cardiovascular disease risk, respiratory problems (e.g. asthma, sleep apnea) and depression (di Palmo et al., 2021; Goran et al., 2003; Sutaria et al., 2019). The consumption of unhealthy foods, including sugary drinks, has also been associated with tooth decay and poor oral health, including among children (Health Canada, 2018a; Large et al., 2023; Valenzuela et al., 2021). In terms of long-term impact, the persistence of poor dietary behaviours and excess weight into adulthood, as is likely in the case of obesity (Simmonds et al., 2016), increases the risk of developing diet-related chronic diseases later in life including cardiovascular disease, type II diabetes, some cancers, chronic kidney diseases and osteoporosis, among others (Afshin et al., 2017; Kumar & Kelly, 2017; Lauby-Secretan et al., 2016; Micha et al., 2017; Simmonds et al., 2016; Singh et al., 2013).

In Canada, 19.4% of children aged 5-17 years in 2015 were considered to be overweight while 12.4% were classified as having obesity (Public Health Agency of Canada, 2024). Some differences among child subpopulations have been noted. The prevalence of obesity was higher among male children (14.9%) versus female children (9.9%), and the combined prevalence of overweight and obesity was higher among children aged 12 to 17 years (35.6%) compared to those aged 5 to 11 years (28.4%) (Public Health Agency of Canada, 2024). Among female children, the prevalence of obesity and overweight was also higher among children from households with lower versus higher educational attainment (39.2 vs 26.9%) (Public Health Agency of Canada, 2024). Broadly, high body-mass index and diet ranked second and fifth, respectively, among risk factors accounting for the largest burden of disease in Canada in 2023 (Institute for Health Metrics and Evaluation, 2023). It is therefore not surprising that poor diet and diet-related chronic diseases in Canada constitute a huge economic burden (Bilandzic & Rosella, 2017; Kotsopoulos & Connolly, 2024; Loewen et al., 2019). For instance, not meeting the country's dietary guidelines was estimated to account for 15.8 billion dollars in direct and indirect costs in 2018 (Loewen et al., 2019).

1.3 Determinants of poor diet and health

1.3.1 Socio-ecological perspective

Children's dietary behaviours, weight and health are shaped by a multitude of individual, interpersonal, community and societal factors that interact throughout the life course (Agurs-Collins et al., 2024; Darnton-Hill et al., 2004; Gilmore et al., 2023; Glanz et al., 2005). Multiple factors across these levels of influence also interact in complex ways and contribute to social disparities in diet and health. Examples of these factors and their intersection are provided in **Figure 1** (Agurs-Collins et al., 2024).

		Levels of Influence			
		Individual	Interpersonal	Community	Societal
Domains of Influence (Over the Life Course)	Biological	Taste Predispositions, Nutritional Status, Nutrition Metabolism, Nutrigenomics, Metabolomics, Microbiome, Food Allergies and Intolerances	Maternal-Child Interaction, Feeding Practices (e.g., breastfeeding), Family Microbiome	Community Illness Food Contaminant	Sanitation Pathogen Exposure (e.g., E Coli)
	Behavioral	Dietary Intake, Dietary Habits, Eating Patterns, Coping Strategies	Family Dietary Practices (e.g., family meals) School/Work Dietary Behavior	Farmers Markets Community engagement (lobbying for full-service grocery stores)	Nutrition Policies and Laws (e.g., food assistance programs and access) State- and City-level Food and Nutrition Policies (soda taxes)
	Physical/Built Environment	Personal Food Environment and Access (exposure to fast food at home)	Household Food Environment School/Work Food Environment	Community Environment Community Resources Neighborhood Food Environment (e.g., food deserts, food marketing)	Societal Structures (e.g., zoning laws) Dept. of Education and School System
	Sociocultural Environment	Food Preferences, Sociodemographic (discretionary income) Food Literacy and Preparation Skills Limited English Cultural Identity/Acculturation Response to Discrimination	Social Networks Family/Peer Norms Interpersonal Discrimination (e.g., dietary practice, body image)	Community Norms Local Structural Discrimination (e.g., dietary practice, body image)	Social Norms Food System (e.g., supply chain) Societal Structural Discrimination
	Health Care System	Insurance Coverage, Access, Utilization Health Literacy Treatment Preferences Medical Nutrition Therapy	Patient-Clinician Relationship Medical Decision-Making (referral to Registered Dietitian)	Availability of Services Safety Net Nutrition Services (WIC, SNAP, food pantries, produce prescriptions)	Quality of Care Health Care Policies for Nutrition Services (screening & treatment) Medically Tailored Meals
Health Outcomes		Individual Health 	Family/Organizational Health 	Community Health 	Population Health 

Figure 1. Nutrition Health Disparity Framework (Agurs-Collins et al., 2024; Creative Commons Attribution-NonCommercial-NoDerivatives licence).

1.3.2 Food environments

Across many countries, including Canada, the prevalence of obesity and diet-related chronic disease have increased dramatically over the last several decades (Afshin et al., 2017; LeBlanc et al., 2019; Ong et al., 2023; Public Health Agency of Canada, 2024). Though increased urbanization and physical inactivity likely contributed to this global trend, researchers argue that changes to the global food system and local food environments, specifically the increased production, availability and marketing of highly palatable and caloric low-cost processed foods which have been overconsumed, are the primary driver (Swinburn et al., 2011). In 2017, a report published by the

High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security defined food environments as “the physical, economic, political and socio-cultural context in which consumers engage with the food system to make their decisions about acquiring, preparing and consuming food.” (High Level Panel of Experts, 2017). Key features of food environments that shape dietary choices include the physical availability and cost of food, food quality and safety, and food promotion and information (High Level Panel of Experts, 2017). Policies that shape food environments such that they promote, by default, healthier food choices are considered necessary to improve dietary patterns and nutritional health at the population-level (Swinburn et al., 2011).

1.3.3 Commercial determinants of health

The activities of commercial actors and their influence on health, be it direct or indirect, have been increasingly recognized as an important determinant of health which are collectively referred to as the “commercial determinants of health” (CDOH) (Gilmore et al., 2023; Kickbusch et al., 2016; Maani et al., 2020; Mialon, 2020). Gilmore et al. (2023) have defined the CDOH as “the systems, practices, and pathways through which commercial actors drive health and equity” (Gilmore et al., 2023). As summarized in **Figure 2**, commercial actors and their allies (e.g. think tanks, interest groups), some of whom have significant resources and power, engage in various practices to pursue their interests (Gilmore et al., 2023). These practices influence structural factors, such as the political and economic system and public policy, which in turn influence physical and social environments and whether they favour or inhibit behaviours (e.g. healthy eating, access to health care) and exposures (e.g. environmental contaminants) that shape the health of individuals (Gilmore et al., 2023).

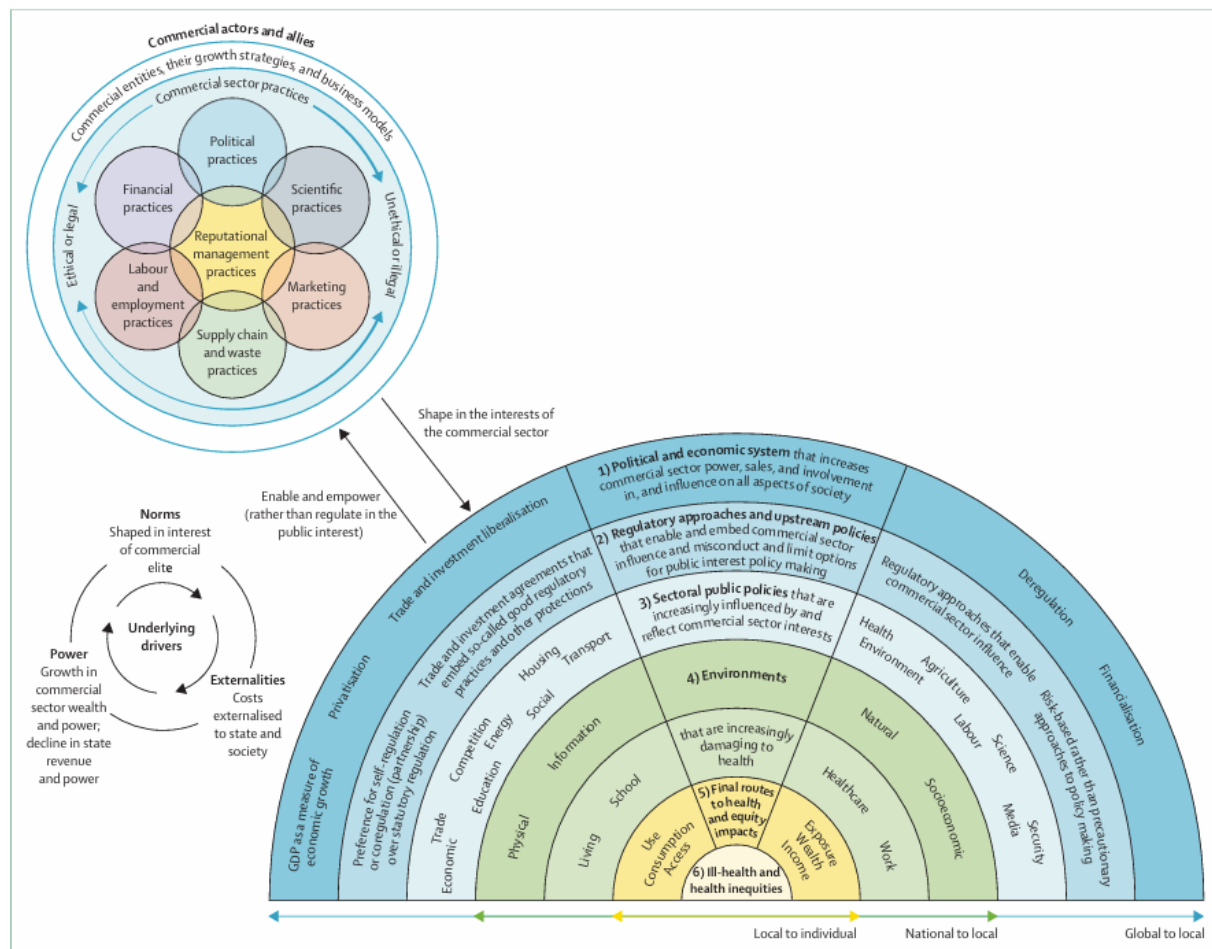


Figure 2 Model of the commercial determinants of health (Gilmore et al., 2023). Permission to include this figure has been granted.

One commercial sector practice that directly shapes health-related behaviours and likely contributes to health inequities is the marketing of unhealthy commodities (Backholer et al., 2021; Gilmore et al., 2023; Harris, 2020; National Center for Chronic Disease Prevention and Health Promotion (US) Office on Smoking and Health, 2012; Norman et al., 2016; Sargent & Babor, 2020). Marketing is defined as “any form of commercial communication or message that is designed to, or has the effect of, increasing the recognition, appeal and/or consumption of particular products and services” (World Health Organization, 2012). It encompasses many different strategies that are used in tandem to persuade consumers and drive consumption including product design, packaging and branding, pricing strategies, the strategic placement of products in retail environments and various types of promotion such as advertising in different media (e.g. television, radio, outdoor media, digital media, print) (American Marketing Association, 2022).

1.4 Food marketing

1.4.1 The effects of food marketing and children's vulnerability

The marketing of unhealthy food and beverages and its ubiquity across media channels and settings, including in Canada (Vanderlee et al., 2025), has been identified as a causal determinant of children's diet and health (Boyland, McGale, Maden, Hounscome, Boland, Angus, et al., 2022; Cairns et al., 2013; Evans et al., 2023; Hastings et al., 2007; McGinnis et al., 2006; Norman et al., 2016; Smith et al., 2019). Several systematic reviews and meta-analyses published since the mid-2000's have established that food marketing shapes children's food choices, increases their consumption of food during or after their exposure in experimental settings and prompts children to request promoted foods from their parents (Boyland, McGale, Maden, Hounscome, Boland, Angus, et al., 2022; Cairns et al., 2013; Evans et al., 2023; Hastings et al., 2007; McDermott et al., 2006; McGinnis et al., 2006; Norman et al., 2016; Smith et al., 2019). Some evidence also suggests food marketing influences food-related norms, including among children (Cairns, 2019; Kelly, Boyland, et al., 2023). The impact of food marketing depends on both exposure (i.e. the number of times or duration a person is exposed) and its persuasive power (i.e. the creative content or marketing techniques that are used) (World Health Organization, 2012).

According to Kelly et al.'s (2015) evidenced-based logic model, shown in **Figure 3**, food marketing shapes children's diet and health via a chain of direct and indirect effects that heighten or compound with repeated exposure (Kelly et al., 2015). Per this model, exposure to food marketing creates associations between promoted products or brands and positive attributes, be it consciously or unconsciously, increases children's recognition of and desire for these products or brands and normalizes their consumption (Kelly et al., 2015). When children are exposed to advertising cues, these effects influence their intention to consume, the products or type of food they ask their parents for and their actual consumption, thus shaping their diet, weight and health (Kelly et al., 2015).

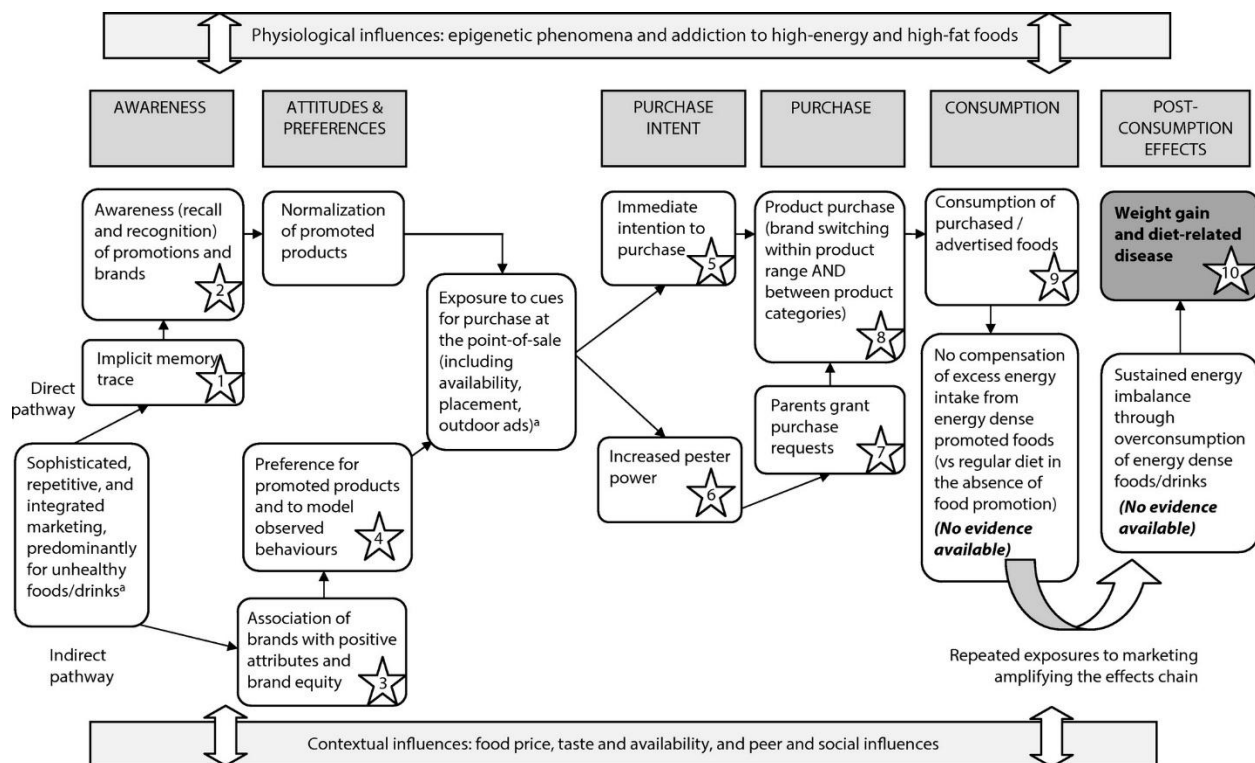


Figure 3 Logic model of unhealthy food promotion effects on children developed by Kelly et al. (2015) based on a narrative review of studies assessing the impact of food marketing. Permission to include this figure has been granted.

Notably, since the publication of this model, one experimental study found that children who consumed more calories after being exposed to unhealthy food advertising did not compensate for this increased intake at the next eating occasion (Norman et al., 2018). This finding supports the model's contention that food marketing contributes to energy imbalance and childhood obesity (Kelly et al., 2015). Observational studies using structural equation modelling have also yielded evidence in support of some of the indirect pathways or intermediary effects between exposure and consumption and post-consumption outcomes proposed by this model (Boyland et al., 2021; Harris et al., 2022; Kelly, Boyland, et al., 2023)

While most research to date has been conducted among children younger than 13 years, a systematic review and meta-analysis published in 2019 and studies published since suggest that older children are similarly influenced by food marketing (Ares et al., 2023; Bragg et al., 2025; Harris et al., 2021; Qutteina et al., 2019). Children are thought to be inherently more susceptible to food marketing because of their neurocognitive immaturity (Carter et al., 2011; Harris et al.,

2021; John, 1999; Wilcox et al., 2004). Notably, children younger than 5 years cannot necessarily discern television advertising from programming and those younger than 7 or 8 years believe that advertising is factual and unbiased (John, 1999; Wilcox et al., 2004). By age 11 or 12 years, most children understand that the purpose of advertising is to sell a product but they are not necessarily aware that it is trying to persuade people to buy a product they otherwise would not buy (Carter et al., 2011). Most research on children's recognition and understanding of advertising is limited to television advertising and as such may not reflect their ability to identify and comprehend other forms of marketing (Carter et al., 2011; Wilcox et al., 2004). As for adolescents, they are considered to be more susceptible to marketing because of puberty-related neurocognitive changes which make them more impulsive and sensitive to rewarding stimuli (like unhealthy food cues) (Harris et al., 2021). Although older children recognize and understand the purpose of advertising and are more skeptical of commercial messages, this does not shield them from its influence as neutralizing its effects requires additional cognitive resources and ability as well as a desire to resist (Harris et al., 2009; Packer et al., 2022). Among adolescents, developmental concerns (e.g. peer acceptance, identity formation), which are exploited by advertisers, are likely to be prioritized over resisting the influence of marketing (Harris et al., 2009, 2021). Resisting the persuasive effects of marketing, even among adults, is thought to be difficult because of the high volume of commercial messages that pervades daily life and because advertisers use strong emotional appeals and means of persuasion that do not spur skepticism and that by-pass conscious awareness (Harris et al., 2009).

1.4.2 Social disparities in exposure or potential exposure

Researchers suggest social disparities in exposure to unhealthy food marketing may be contributing to disparities in dietary behaviours and health among children (Backholer et al., 2021; Castronuovo et al., 2021). According to existing review articles, research on food marketing on television, outdoor media and in schools has suggested or shown that children's exposure or potential exposure¹ to unhealthy food advertising can vary among subpopulations (Backholer et al., 2021; Castronuovo et al., 2021; Finlay et al., 2022; Fleming-Milici & Harris, 2018; Velazquez et al., 2017). For instance, the frequency of- or exposure to- unhealthy food marketing, based on

¹ "Exposure" refers to the number of times an individual is actually exposed to a commercial message whereas "potential exposure" refers to the frequency of advertising or marketing in a media or physical environment where an individual is likely to be exposed (Helleve et al., 2018).

self-reported or more objective measures, has been estimated or shown to differ in some contexts based on race/ethnic background (Backholer et al., 2021; Fleming-Milici & Harris, 2018), gender or sex (Castronuovo et al., 2021), age (Fleming-Milici & Harris, 2018; Velazquez et al., 2017) and indicators of socio-economic status or position (Backholer et al., 2021; Velazquez et al., 2017). Broadly, existing reviews have noted that some racial or ethnic minorities, particularly Black and/or Hispanic children in the United States, are more exposed to- and targeted by- unhealthy food advertising on broadcast television compared to their White counterparts (Backholer et al., 2021). Unhealthy food advertising also tends to be more frequent in neighbourhoods disproportionately populated by racial/ethnic minorities and those with lower-income households, though patterns by income are less consistent across studies/contexts (Backholer et al., 2021; Finlay et al., 2022). Other reviews suggested boys or males in some contexts were more exposed to, and targeted by, unhealthy food advertising, particularly on television, and food marketing in schools was more frequent in high schools and in those with more low-income students (Castronuovo et al., 2021; Velazquez et al., 2017). In addition to being disproportionately exposed, some research also suggests that some subgroups may be more susceptible to the influence of some types of food marketing or food marketing content (Backholer et al., 2021; Bragg et al., 2025; Castronuovo et al., 2021; Harris et al., 2021).

In Canada, the examination of “equity-related factors” has been identified as an important gap in research examining food environments, including food marketing (Potvin Kent et al., 2022; Vanderlee et al., 2025). In terms of research examining social disparities in exposure or potential exposure to unhealthy food marketing, studies suggest some child subpopulations may be more exposed to such marketing, overall, in certain media and settings (e.g. digital media, broadcast television) or to specific promotional strategies (Acton et al., 2023; Potvin Kent et al., 2024; Potvin Kent, Pauzé, et al., 2019; Vergeer et al., 2025).

In terms of age differences, evidence suggests children aged 13 to 17 years may be more exposed to marketing promoting certain unhealthy foods (e.g. fast food, snack foods) and more exposed to unhealthy food marketing in digital media compared to younger children though evidence is somewhat conflicting (Acton et al., 2023; Potvin Kent et al., 2024; Potvin Kent, Pauzé, et al., 2019; Vergeer et al., 2025). According to an analysis of data from a national cross-sectional survey conducted in 2021, children aged 13-17 years were also more likely to report exposure to food

marketing in outdoor media, schools and in sport and event settings (including cultural and professional sporting events) compared to children aged 10-12 years (Acton et al., 2023). Conversely children aged 2 to 11 years appear to be more exposed to food advertising on broadcast television compared to older children (Czoli et al., 2020; Pauzé & Potvin Kent, 2021; Potvin Kent, Soares Guimaraes, et al., 2023). Children 10-12 years were also more likely to report exposure to certain promotional strategies (e.g. celebrity endorsements, cartoon characters) compared to those aged 13-17 years (Acton et al., 2023; Vergeer et al., 2025).

In terms of differences by sex or gender, there is no evidence to date to suggest differences in aggregate exposure to unhealthy food marketing between boys/males and girls/females though studies have observed differences in measured or self-reported exposure in certain media (e.g. broadcast television) or to certain promotional strategies in social media or across media and settings (Acton et al., 2023; Amson et al., 2023; Potvin Kent, Soares Guimarães, et al., 2023). In 2021, male/boys aged 10-12 years in Canada were more likely to report exposure to food marketing in videos games and via sports teams and athletes compared to girls/females of the same age (Acton et al., 2023). Conversely, girls/females were more likely to report exposure to unhealthy food marketing online and in retail settings and by famous people (Acton et al., 2023).

Acton et al. (2023) also observed differences in self-reported exposure by race/ethnicity and socio-economic status. Children who identified as being part of certain racial minority groups, particularly Indigenous, Black or South Asian, were more likely to report exposure to certain types of food marketing compared to White children (Acton et al., 2023). Conversely, children of East/Southeast Asian descent were less likely to report exposure to food marketing for certain unhealthy foods (i.e. fast food, sugary drink and desserts) overall and to unhealthy food marketing in specific media and settings compared to White children (Acton et al., 2023). In terms of differences by socio-economic status, children who perceived the adequacy of their family's income to be lower were more likely to report exposure to marketing for certain unhealthy foods (i.e. sugary cereal), in certain settings (e.g. retail and sport and event settings) and to certain promotional techniques (e.g. branded clothes/posters/stickers, promotion via sports teams and athletes) compared to those who perceived their family's income as being more than enough to meet their needs (Acton et al. 2023).

Overall, existing evidence in Canada and other countries suggest that social disparities in exposure may be specific to certain media, settings and promotional content. Understanding these disparities is needed to design policies that protect all children comprehensively without creating inequities or worsening existing ones.

1.5 Sports sponsorship

Sports sponsorship is a promotional strategy whereby organizations or individuals (i.e. sponsors) provide financial or in-kind support to a sports activity in exchange for promotional benefits, including the right to associate with the sponsored activity (Masterman, 2007; Sandler & Shani, 1989). Contrary to professional sports sponsorship, agreements or exchanges between amateur sports organizations and sponsors can be informal and can also be perceived as an expression of genuine support as opposed to a relationship purely driven by a sponsor's commercial objectives (Hindmarsh & Hayton, 2024; Zorbas et al., 2023).

In addition to being a form of marketing, food company sponsorship of children's sports is also a corporate social responsibility initiative, which is an activity that commercial actors ostensibly undertake out of a sense of social and/or moral obligation (Batty et al., 2016; Gilmore et al., 2023). Some argue these initiatives are primarily a public relations tool used to bolster a company's reputation and counteract their association with a harmful product (Batty et al., 2016; Gilmore et al., 2023). Corporate philanthropy has also been characterized as a corporate political strategy, particularly when it involves fostering relationships with stakeholders such as health and community organizations (otherwise described as "constituency building") (Mialon et al., 2015).

1.5.1 Evidence on the effects of sports sponsorship

To date, much of the evidence on the effect of food marketing among children, particularly in the health literature, mostly stems from research on television advertising, product packaging and increasingly, in digital media (Evans et al., 2023; Smith et al., 2019). Nevertheless, existing studies on the effect of sports sponsorship and related advertising promoting food companies or brands, unhealthy commodities or industries (e.g. alcohol, tobacco, gambling) or public health messages among children and/or adults have documented effects or associations consistent with the hierarchy of effects model described previously (Brown, 2016; Corti et al., 1997; De Jans et al.,

2024; Dixon et al., 2019; Kelly, Baur, Bauman, & King, 2011; Kelly et al., 2015; Pettigrew et al., 2013). This research and other relevant research are summarized below by type of study.

Experimental research

Experimental studies have found that sports sponsorship can create unconscious associations between sponsors and sports (Bestman et al., 2015; Pettigrew et al., 2013). For instance, studies by Pettigrew et al. (2013) and Bestman et al. (2015) used projection techniques and asked children aged 5-12 years to organize magnets of professional sports teams and brand logos on a whiteboard, without giving any specific direction about the task such as referring to matching and/or sponsorship. They found 76-77% of children correctly associated at least one team with one of their respective food, alcohol or gambling-related sponsor, with older children (aged 9-12 years) being more likely to do so (Bestman et al., 2015; Pettigrew et al., 2013). In the one study that asked participants to explain their magnet display, only 15% said they matched brands with teams because of sponsorship while 29% provided a vague justification implying teams and brands had some kind of relationship (Bestman et al., 2015). In some instances where teams and sponsors were incorrectly matched, children associated the team with a brand within the same product category as the correct sponsor (Pettigrew et al., 2013). Brand or product category associations also appeared in some instances to be extended to other teams within the same league or sport (Bestman et al., 2015; Pettigrew et al., 2013). Overall, these studies suggest that sponsorship influences children at an unconscious level and creates an implicit association between sponsors (and potentially their product category) and sport.

A series of randomized control studies administered using online surveys among children, young adults or parents also found that exposure to sponsorship-related advertising promoting food brands influences brand awareness and attitudes and product choice (Dixon, Scully, Wakefield, Kelly, & Pettigrew, 2018; Dixon, Scully, Wakefield, Kelly, Pettigrew, et al., 2018; Scully et al., 2020). Specifically, Scully et al. (2020) found that parents exposed to a video and flyer promoting a children's sports program sponsored by an unhealthy food brand were more likely to recall this brand, had more positive views of the promoted brand and was more likely to choose a product of this brand than participants in the control condition exposed to a non-food sponsor. Similar findings were observed among young adults in an experiment assessing the effect of professional sports sponsorship by an unhealthy food brand, though no effect was observed on product choice

(Dixon, Scully, Wakefield, Kelly, Pettigrew, et al., 2018). Another experiment conducted among children aged 5-10 years did not observe any effects resulting from exposure to sponsorship promoting an unhealthy food brand though exposure to a healthy food brand sponsor was found to increase brand awareness relative to the control condition (Dixon, Scully, Wakefield, Kelly, & Pettigrew, 2018). Researchers suggested null findings in these two latter studies were related to the advertising exposure being too brief to influence outcomes and/or the ceiling effect (Dixon, Scully, Wakefield, Kelly, & Pettigrew, 2018; Dixon, Scully, Wakefield, Kelly, Pettigrew, et al., 2018).

Only one experimental study, to my knowledge, has assessed the effect of sponsorship advertising among children in a naturalistic setting (Corti et al., 1997; Dixon et al., 2019; Kelly, Baur, Bauman, & King, 2011; Kubacki et al., 2018). This non-randomized experiment exposed children aged 8 to 14 years enrolled in a three-day football training camp to an anti-smoking campaign and compared the effect of different promotional strategies on children's awareness (Corti et al., 1997). This study found the odds of recalling the campaign among children who were exposed to role models (i.e. coaches, professional athletes) wearing a promotional t-shirt throughout the entire activity was five times higher than children who were only exposed to a promotional sign and three to ten times higher among those exposed to other conditions involving role models briefly talking about the campaign or a combination of examined strategies (Corti et al., 1997). Authors suggested promotional t-shirts may be particularly effective because the message is placed in an area that would get children's attention and because they allow for repeated exposure to the message over time (Corti et al., 1997).

Observational research

One observational study suggests that children can recall the sponsors of their own club and hold positive views of sponsoring food companies (Kelly, Baur, Bauman, King, et al., 2011b). Specifically, this Australian study found that 74% of 103 surveyed children reported being aware of the companies that sponsored their sports club with most (92%) being able to correctly identify at least one sponsor (Kelly, Baur, Bauman, King, et al., 2011b). This study also reported that 69% of children agreed that food companies that sponsor sports were cool and 59% agreed that they would like to buy a sponsor's product to "return the favour" (Kelly, Baur, Bauman, King, et al., 2011b).

Otherwise, observational research on other unhealthy commodities or industries have noted among both children and adults positive associations between exposure to sports sponsorship and increased brand awareness and attitudes and related behavioural intentions (e.g. intention to gamble) and behaviours (e.g. tobacco or alcohol use) (Brown, 2016; De Jans et al., 2024; Kelly, Baur, Bauman, & King, 2011).

Qualitative research

One qualitative photovoice study exploring the food experiences of Canadian adolescents who play hockey suggested that exposure to sponsorship at a younger age had generated feelings of reciprocity (Caswell & Hanning, 2018). Specifically, one participant was quoted as saying the following about receiving sponsorship from a fast food restaurant: "... played Timbits when you were like real young, so prob'ly affects your hockey career, so like oh, Tim Horton's supported me when I played hockey, so I'm gonna support them when I wanna get food." (Caswell & Hanning, 2018).

1.5.2 Some processes underpinning the effects of sponsorship

Different processes or factors explain or moderate the effect of sponsorship on consumer outcomes (i.e. awareness, brand attitudes, brand preference, purchase intention, purchasing) (Cornwell et al., 2005).

The influence of sponsorship is partly explained by the "mere exposure effect" (Cornwell et al., 2005). Sponsorship can result in repeated exposure to a sponsor's logo in a manner that is incidental. Notably, evidence suggests that repeated exposure to a brand can increase its familiarity and can inherently generate positive brand perceptions or preferences without conscious awareness (Cornwell et al., 2005; Harris et al., 2009).

Sponsorship can also positively influence brand attitudes and purchase intentions via image transfer (Gwinner et al., 2009; Meenaghan, 2001). This is achieved when the positive attributes associated with a sponsored entity (e.g. sports team or event) are transferred to the sponsoring brand or company (Gwinner et al., 2009). Notably, the more a person identifies with a sponsored entity, the more the image-transfer effect and subsequent influence on purchase intention is likely to be greater (Gwinner et al., 2009). Sports sponsorship is thought to be particularly effective because

of the strong emotional attachment that people have with their preferred sports activities, teams or events (Meenaghan, 2001).

The effects of sponsorship are moderated by individual or group-level factors (e.g. experiences with and knowledge of the sponsor or sponsored entity), market factors (e.g. a brand's existing reputation, competing sponsorship advertising) and management factors (e.g. the way in which companies promote their relationship with sponsors) (Cornwell et al., 2005).

1.5.3 Food company sponsorship of children's sports: Extent, nature, benefits, social disparities and exposure

To date, there are seven published studies that have specifically examined the extent to which children's sports clubs or activities are sponsored by food companies and the nature of sponsoring companies and/or related marketing (Gonzalez et al., 2020; Kelly, Baur, Bauman, King, et al., 2011a; Maher et al., 2006; Martino et al., 2021; Ooi et al., 2019; Pauzé et al., 2020; Watson et al., 2016) and two studies have examined children's estimated or self-reported exposure to food company sponsorship or related advertising (Hammond et al., 2023; Kelly et al., 2014). Most of this research has been exclusively conducted in Australia (n=6 studies) (Gonzalez et al., 2020; Kelly, Baur, Bauman, King, et al., 2011a; Kelly et al., 2014; Martino et al., 2021; Ooi et al., 2019; Watson et al., 2016), followed by New Zealand (n=1) (Maher et al., 2006) and Canada (n=1) (Pauzé et al., 2020), and one study has been conducted in multiple countries (Hammond et al., 2023). These studies are described in **Table 2** and are broadly summarized by topic below. Existing evidence on children's sports sponsorship in Canada is described in more detail in **section 1.6**.

The extent and nature of food company sponsorship and promotional benefits for sponsors

Overall, current studies suggest that food company sponsorship of children sports in community settings is relatively prevalent with fast food restaurants or “unhealthy” sponsors being a commonly reported type of food-related sponsor (Gonzalez et al., 2020; Kelly, Baur, Bauman, King, et al., 2011a; Maher et al., 2006; Martino et al., 2021; Ooi et al., 2019; Pauzé et al., 2020; Watson et al., 2016). For example, a study auditing the websites and Facebook pages of 216 children's sports clubs in Australia in 2019 reported that 26% of clubs were sponsored by an “unhealthy” food sponsor (Martino et al., 2021). Another Australian study surveying 108 sports

clubs over the phone in 2009-10 found that 50% of the 58 reported food-related sponsors were considered “unhealthy” (Kelly, Baur, Bauman, King, et al., 2011a).

Food companies can derive multiple promotional benefits from sponsoring children’s sports. Sponsorship-related promotional activities that have been reported include promotion on jerseys, sporting awards, sports equipment, and other items, advertising on signs, the sale or use of products by clubs, advertising on club websites, social media accounts and newsletters, naming rights for sporting activities or teams, announcements over a public address system and presence at club events (Kelly, Baur, Bauman, King, et al., 2011a; Martino et al., 2021; Ooi et al., 2019; Watson et al., 2016). Some of these marketing activities likely result in repeated and prolonged exposure to food advertising among children (e.g. use of branded jerseys, permanent signage in sporting areas) while others may be punctual (e.g. the provision of free food or advertising at a tournament) or less likely to reach children at all (e.g. advertising on club websites, newsletters).

Although studies quantifying the sponsors of children’s sports clubs or programs have generally found that food-related companies make up the minority (4.5-17%) of total sponsors, some of this sponsorship, particularly corporate programs, may reach thousands of children (Kelly, Baur, Bauman, King, et al., 2011a; Martino et al., 2021; Pauzé et al., 2020; Watson et al., 2016). For instance, a website auditing 56 developmental sports programs for children in Australia identified 10 unhealthy food sponsors (Watson et al., 2016). The number of children participating annually in programs supported by these sponsors ranged from 5,000 to 537,000 (Watson et al., 2016). Another Australian study estimated that children aged 5-14 years in New South Wales who participated in popular sports sponsored by a food-related company were potentially exposed to sponsorship-related food marketing for 21,800 to 63,700 hours per week in aggregate in 2009, depending on the sport (Kelly et al., 2014). In terms of data on individual-level exposure, one survey administered in 2021 in six countries, including Australia, Canada, Chile, Mexico, the United Kingdom and the United States, asked children aged 10-17 years who played on a sports team to report whether they had seen the name or logo of a restaurant or food company on signs at their sporting events or on their sports equipment (Hammond et al., 2023). The national prevalence of reported exposure on signs and sports equipment in these countries ranged from 31 to 42% and 27 to 34%, respectively (Hammond et al., 2023).

Table 2. Summary of studies examining the extent and nature of food company sponsorship of children’s sports and children’s estimated or self-reported exposure to sponsorship-related advertising.

Author & year	Study objectives	Sample and methods	Results
(Hammond et al., 2023)	1- Assess the prevalence of diet-related outcomes (including self-reported exposure to food marketing) among children in multiple countries to evaluate food environment policies	<u>Sample:</u> ▪ Children aged 10-17 years in Australia (n=919), Canada (n=3,682), Chile (n=1,112), Mexico (n=1,612), United Kingdom (n=1,577) and United States (n=1,740). <u>Methods:</u> ▪ Cross-sectional survey fielded in Nov-Dec 2021. ▪ Children who reported playing on a sports team were asked to self-report whether they had seen the names or logos of food or restaurant companies on i) their sports equipment and ii) signs at their sporting events. ▪ Descriptive analyses	Prevalence of children’s self-reported exposure to food advertising on their sports equipment and on signs at their sporting events, respectively, among those who reported playing on a sports team in 2021 by country: ▪ Australia (N=356): 34% and 38% ▪ Canada (N=1,055): 27% and 36% ▪ Chile (N=283): 30% and 38% ▪ Mexico (N=637): 33% and 43% ▪ United Kingdom (N=561): 30% and 31% ▪ United States (N=607): 27% and 39%
(Martino et al., 2021)	2- Quantify unhealthy sponsorship (unhealthy food, alcohol, gambling) 3- Assess differences by geographic area and sport.	<u>Sample:</u> ▪ 216 junior sports clubs (offered by 191 clubs) in 30 communities in the State of Victoria, Australia. ▪ Stratified random sample by level of remoteness (metropolitan/regional location) and area-level socio-economic disadvantage (SED; 3 levels dichotomized into high/low for analysis). ▪ 8 sports <u>Methods:</u> ▪ Audit of websites and Facebook pages in Sept-Nov 2019. ▪ Assessment of food sponsors as “healthy”, “less healthy” and “unhealthy” using an existing tool for classifying food retailers that was adapted. ▪ Reporting on “unhealthy food sponsors”, “other food sponsors” (i.e. healthy and less healthy sponsors) and “high-risk unhealthy food sponsor” (i.e. subset of unhealthy sponsors that have a large market share). ▪ Logistic regressions	▪ Of the 216 clubs, 26% accepted sponsorship from unhealthy food sponsors and 18% from high-risk food sponsors ▪ Of the 2032 sponsors identified across clubs, 4.7 % were “unhealthy food sponsors”, 2.2% were “high-risk unhealthy food sponsors” (mostly fast food) and 9.2% were “other food sponsors”. <u>Social disparities:</u> ▪ The odds of accepting ‘high-risk food sponsorship’ (AOR=3.6; 95%CI:1.62-8.04) and ‘unhealthy food sponsorship’ (AOR=2.1; 95%CI:1.08-4.20) was greater among regional clubs compared to metropolitan clubs, independent of sport and SED. ▪ Differences by SED were not statistically significant. <u>Differences by sport:</u> ▪ The odds of football and netball clubs accepting ‘high-risk food sponsorship’ was greater vs ‘other sports’ (includes basketball, tennis, gymnastics, and athletics) independent of level of remoteness and SED. ▪ The odds of football, netball, cricket, and soccer clubs accepting ‘unhealthy food sponsors’ was greater vs ‘other sports’ independent of level of remoteness and SED.

Author & year	Study objectives	Sample and methods	Results
(Pauzé et al., 2020)	1-Quantify and characterize the sponsorship of children's sports clubs	<u>Sample:</u> 67 sports clubs with child participants located in Ottawa, Canada. 5 sports (hockey, soccer, basketball, swimming and baseball). <u>Methods:</u> Website audit in Sept-December 2018. - Classification by type of food sponsor. - Descriptive analyses	- Of the 67 clubs, 40% had food sponsors, 25% were sponsored by a fast-food restaurant and 19% were sponsored by other restaurants. - Of the 312 identified sponsors (both commercial and non-commercial sponsors), 16% were food sponsors. - Of the 51 food sponsors, 45% were fast food restaurants, 41% were other restaurants, 4% were supermarkets and 10% were other food categories. <u>Differences by sports:</u> - Share of clubs sponsored by a food-related company was highest among soccer clubs (62%) and lowest for basketball (15%). - Share of sponsors that were food companies was highest for soccer (25%) and basketball (22%) and lowest for swimming (12%) and baseball (7%).
(Gonzalez et al., 2020)	1-Assess the sponsorship practices of fast-food restaurants and alcohol-related companies 2-Assess differences by club characteristics 3-Assess the views of clubs and parents regarding sponsorship (not included)	<u>Sample:</u> 79 junior sports clubs with at least 40 players and who participate in the 'Good Sport' program to address alcohol use. - Sampled from 3 sports community and non-professional leagues (football, rugby) located in the states of New South Wales and Victoria, Australia. - Response rate (clubs): 92% (79/86) <u>Methods:</u> - Cross-sectional telephone survey with sports club representatives (about sponsorship practices and views). - Month/year not specified. - Logistic regressions, independent variables include sports (Australian football league/Rugby league), club size (smaller/larger), location (major city/inner or outer regional) and area-level socio-economic status (SES; more disadvantaged/less disadvantaged).	- Of the 79 sports clubs, 90% were sponsored, 49% had an alcohol-related sponsor and 27% had a fast-food sponsor. <u>Social disparities:</u> - SES was not associated with reporting fast food sponsorship in simple ($p=0.92$) and multiple logistic regressions ($p=0.77$). - Geographic location was not significantly associated to reporting fast food sponsorship in simple regression ($p=0.43$) but was significant in the multivariable regression ($p=0.05$). The odds of reporting fast food sponsorship were higher among clubs in regional areas compared to major cities (AOR=9.1; 95%CI: 1.0-84.0). <u>Benefits for sports clubs:</u> - Of those who had a fast-food sponsor, 57% received discounted food and beverages, 52% received money, 38% received vouchers and 24% received free food.

Author & year	Study objectives	Sample and methods	Results
(Ooi et al., 2019)	1-Assess the extent of sugar-sweetened beverage (SSB) and fast-food sponsorship related marketing in community sports settings	<u>Sample:</u> 39 rugby and soccer junior sports clubs in New South Wales, Australia, who participate in Good Sports Program to address alcohol use. <u>Methods:</u> - One-day in-person observation of marketing at club game days in April-May 2015. - Fischer Exact Tests	- Of the 39 clubs, 10 (26%) had marketing or sponsorship from fast food or sweetened drink brands. - Of the 10 clubs with food marketing, 7 had fast food marketing only, 2 had sugary drink marketing and 1 had both. - Fast-food companies were most often promoted via branded jerseys/accessories (n=10) and SSB were most often promoted on banners (n=2). <u>Differences by sport and social disparities:</u> - No statistically significant differences in the presence of fast-food marketing, SSB marketing and one or the other by sport (football/rugby) or club size (≤ 160/>160). - Clubs in regional areas were more likely to have fast food or SSB marketing compared to those in major cities (64% vs. 11%, $p=<0.01$).
(Watson et al., 2016)	1-Quantify and characterize the sponsorship of children's sport development programs	<u>Sample:</u> 56 websites of junior sports development programs affiliated with sporting organizations that receive government funding in Australia. <u>Methods:</u> - Cross-sectional website audit. - Month/year not specified. - Classification of food sponsors as unhealthy if one or more product it was associated with was categorized as such using the Food Standards Australia New Zealand nutrition criteria. - Descriptive analyses	246 sponsors were identified across the 56 websites. 11 were food sponsors (1 healthy, 10 unhealthy) and 1 alcohol sponsor. - All food sponsors had their logo on examined websites, 4 had the naming rights for the program, 4 gave out branded kits to participants, and 3 had logos on sport uniforms. - Type of unhealthy food companies or brands identified included fast food (McDonald's), sugary drinks (Breaka, Schweppes, Nippy's, Gatorade, Milo), candy (Robbies confectionary), and breakfast cereals/snacks (Kellogg's). - Number of annual participants of the programs sponsored by an unhealthy food company ranged from 5000 to 537,000.
(Kelly et al., 2014)	1-Estimate children's population-level exposure to marketing stemming from the sponsorship of children's sports clubs	<u>Sample:</u> - Exposure to food company sponsorship was estimated for children aged 5-14 years living in New South Wales, Australia using data from 2009-10. <u>Methods:</u> - National survey data on children's participation in sports was used to calculate the "weekly-person-time exposure" (referred to as person-hours) for popular sports by multiplying the median weekly	Percentage of clubs surveyed in New South Wales that were sponsored by a food-related company: - Soccer, basketball and netball: 25% - Cricket (outdoor): 42% - Rugby league and athletics, track and field: 75% - Swimming, martial arts and tennis (outdoor): 0% Aggregate weekly person-hours of exposure to food and beverage sponsorship: - Soccer: 45,600 - Basketball: 27,600 - Netball (outdoor): 21,800

Author & year	Study objectives	Sample and methods	Results
		exposure in each sport by the # of children who participated in that sport. Exposure to food company sponsorship was estimated by dividing the “weekly total person-time exposure” for select popular sports by the % of sports clubs within these sports that reported receiving sponsorship from a food-related company (as per Kelly, Baur, Bauman, King et al., 2011a).	- Cricket (outdoor): 56,900 - Rugby league: 63,700 - Athletics, track and field: 38,300
(Kelly, Baur, Bauman, King, et al., 2011a)	1-Quantify and characterize the sponsorship of children’s sport clubs, particularly by food-related companies. 2-Assess the relative financial contribution of sponsorship to sports club revenues	<u>Sample:</u> 108 sports clubs in New South Wales and the Australian Capital Territory, Australia. 9 most popular sports. - Random selection & stratification by sport and geographic area (based on area-level SES and urbanicity). - Response rate: 99% (108/109) <u>Methods:</u> - Cross-sectional semi-structured telephone survey with sports club officials in Aug-Oct 2009. - Classification of food sponsors as meeting (or not) criteria for healthy sponsorship based on expert opinion using a Delphi survey. - Chi-square test	65% clubs were sponsored. - Mean of 5 sponsors among sponsored clubs. - Of sponsors identified across clubs (n=37), 17% were food-related and 8% alcohol-related. - Of the food sponsors (n=58), 50% deemed not healthy. <u>Social disparities:</u> - Food-related sponsors made up a larger share of sponsors (25%) for clubs with predominantly younger members ($\geq 75\%$ aged 5-14) compared to those with mixed age (10%) or predominantly older members ($< 25\%$ aged 5-14 yrs; $\sim 8\%$) - Food-related sponsors made up a larger share of sponsors (24%) of clubs with mixed genders compared to those that were $\geq 75\%$ male (13%) and female (9%). - Clubs with predominantly younger or mixed aged members had a higher share of food-related sponsors classified as not healthy (54% and 67%, respectively versus 13%, $p < 0.05$) - No data presented by geographic area or SES. <u>Differences by sport:</u> - Sports with the highest mean number of sponsors (overall, not food-related) were rugby (10 ± 6.4) and athletics (5 ± 2.3) while sports with the lowest mean were swimming (2 ± 0.8) and tennis (2 ± 0.7). <u>Benefits for sponsors and clubs:</u> - Most common form of sponsorship promotion were branding on uniforms (53% of food-related sponsors), official sponsor designation (52%), listed in newsletter (29%), signs displayed at club (28%), sale or use of products (28%), branded sporting

Author & year	Study objectives	Sample and methods	Results
			awards (24%), listed on club website (16%) and announcement over a PA system (14%). ▪ Most common benefit for club were direct funding (41% of food-related sponsors) and vouchers for players (29%). The receipt of uniforms, equipment or free or discounted products for players or spectators was rare (2-3%). ▪ Among sponsored clubs (n=70), 67% reported <25% of their revenue came from sponsorship.
(Maher et al., 2006)	1-Quantify and characterize the sponsorship of sports by healthy and unhealthy (i.e. unhealthy food, alcohol, and gambling) sponsors	<u>Sample:</u> ▪ Most popular sports among boys and girls aged 5-17 years in New Zealand (i.e. rugby, cricket, touch rugby, soccer, basketball, netball, athletics, tennis). ▪ Sampled national, regional and club or team-level sports organizations located in the Greater Wellington Region. <u>Methods:</u> ▪ Cross-sectional website audit in Jan 2006. ▪ Classification of sponsors into 11 categories including alcohol, gambling, and food related. ▪ Food-related sponsors classified as “healthy” (e.g. fruit, vegetable, low sugar cereals), “unhealthy” (e.g. foods high in fat or sugar including meals from fast food restaurants) or “mixed” profile (e.g. juice, high fat milk, multi-component meal). ▪ Sponsors classified as being directed to “junior” sports if identified on a junior club or team website or if the sponsorship was for a tournament for this age group. ▪ Statistical testing not described.	▪ Of the 107 websites audited, 86 were for clubs, 12 were for regional organizations and 9 were for national organizations. ▪ A total of 640 sponsors were identified across websites. ▪ Among the 33 “junior” sports sponsors identified, 24% were considered unhealthy food, 3.0% were alcohol-related and 15.2% were gambling-related. ▪ A greater share of sponsors for junior sports were related to unhealthy food compared to sponsors not identified as being for junior sports (24.2% versus 1.6%; RR = 14.72, 95% CI = 6.22, 34.8; p < 0.001).

Benefits for sports clubs

Sports clubs can also derive multiple benefits from food company sponsorship. These benefits can include direct funding or various in-kind contributions such as discounted or free food, product vouchers for players and free uniforms, sports equipment and other items (Gonzalez et al., 2020; Kelly, Baur, Bauman, King, et al., 2011a; McDonald's Canada, n.d.-a; Tim Hortons, n.d.; Watson et al., 2016). To date, only two Australian studies have examined the benefits that sports clubs receive from food company sponsors, overall or specifically from fast food restaurants (Gonzalez et al., 2020; Kelly, Baur, Bauman, King, et al., 2011a). The most recent study surveying 79 children's rugby and football/soccer clubs found that 27% had a fast-food restaurant sponsor with most of these sponsored clubs receiving discounted food (57%) and direct funding (52%) followed by vouchers (38%) and free food (24%) (Gonzalez et al., 2020). An earlier study surveying 108 clubs for the nine most popular sports among Australian children reported that clubs most commonly received direct funding and vouchers from food-related sponsors, which were provided by 41 and 29% of these sponsors, respectively (Kelly, Baur, Bauman, King, et al., 2011a). Most clubs (67%) also reported that total sponsorship constituted less than 25% of their funding (Kelly, Baur, Bauman, King, et al., 2011a).

Social disparities in the distribution of sponsorship and exposure to related advertising

Currently, little is known regarding social disparities in food marketing exposure or potential exposure resulting from food company sponsorship in children's amateur sports settings. Some Australian studies however have examined club-level differences in sponsorship-related outcomes by urbanicity (Gonzalez et al., 2020; Martino et al., 2021; Ooi et al., 2019), area-level socio-economic disadvantage (Gonzalez et al., 2020; Martino et al., 2021), the predominant age and gender of club members (Kelly, Baur, Bauman, King, et al., 2011a) and sport (Kelly et al., 2014; Martino et al., 2021; Ooi et al., 2019).

Overall, studies found that clubs located in more regional areas, compared to those in metropolitan centers, were more likely to receive sponsorship from fast-food restaurants or food companies characterized as 'unhealthy' or to have advertising promoting fast food at their sporting events (Gonzalez et al., 2020; Martino et al., 2021; Ooi et al., 2019). In terms of socio-demographic differences, one study by Kelly et al. (2011) found that food-related sponsors made-up a greater percentage of total sponsors among clubs whose members were mostly ($\geq 75\%$) younger than 15

years compared to those with mixed ages and mostly older club members (Kelly, Baur, Bauman, King, et al., 2011a). The same study also reported that food-related sponsors constituted a larger share of sponsors among clubs with mixed genders compared to those whose members were mostly ($\geq 75\%$) male or female (Kelly, Baur, Bauman, King, et al., 2011a). Notably, existing studies did not observe statistically significant differences in sponsorship outcomes between clubs situated in areas of higher versus lower socio-economic disadvantage (Gonzalez et al., 2020; Martino et al., 2021).

Food company sponsorship of sports in schools

To my knowledge, no studies focusing on the sponsorship of children's sports has examined the sponsorship of sporting teams, leagues or activities within schools. Notwithstanding, some research conducted in high income countries (e.g. United States, Australia) have documented the presence of food advertising in sporting areas (e.g. signs, scoreboards, gym equipment) and on sports jerseys in school settings (Craypo et al., 2006; Polacsek et al., 2012; Vanderlee et al., 2024; Velazquez et al., 2015; Watkins et al., 2025). Whether this advertising stemmed from the sponsorship of sports or other commercial activities in schools (e.g. food service contracts) is unclear.

Limitations of the current research

As highlighted above, most of the existing research on food company sponsorship of children's sports has been conducted in Australia. Most studies quantifying and characterizing the sponsors of children's sports clubs or activities have done so by auditing the websites or social media pages ($n=4$) of sports clubs or programs (Maher et al., 2006; Martino et al., 2021; Pauzé et al., 2020; Watson et al., 2016) while others have administered surveys to sports club officials over the phone ($n=2$) (Gonzalez et al., 2020; Kelly, Baur, Bauman, King, et al., 2011a) or conducted observational audits at sporting events ($n=1$) (Ooi et al., 2019).

While audits of publicly available information on club websites or social media publications provide some insight into the type of food companies sponsoring children's sports (Maher et al., 2006; Martino et al., 2021; Pauzé et al., 2020; Watson et al., 2016), they are likely limited in their ability to provide comprehensive information on how these sponsors are promoted and the benefits sports clubs derive from sponsorship. As for observational audits, although they can yield objective

information on how sponsors are promoted at sporting events (Ooi et al., 2019), they are also limited in their ability to ascertain the benefits derived by sports clubs and may not provide a comprehensive view of children's exposure to related food marketing outside of the audited event. Conversely, surveys with a representative of children's sports clubs can provide more detailed information on the benefits of sponsorship for both sports clubs and their sponsors despite being subject to recall bias (Gonzalez et al., 2020; Kelly, Baur, Bauman, King, et al., 2011a). To date, only two studies have documented benefits that sports clubs receive from food-related sponsors (Gonzalez et al., 2020; Kelly, Baur, Bauman, King, et al., 2011a). Neither of these studies attempted to estimate the financial contribution, nor the value of in-kind donations provided specifically by food-related sponsors (Gonzalez et al., 2020; Kelly, Baur, Bauman, King, et al., 2011a).

In terms of assessing children's exposure to food marketing stemming from sponsorship, current research mostly examines children's potential exposure and estimates or captures this exposure at an aggregate-level (Gonzalez et al., 2020; Kelly, Baur, Bauman, King, et al., 2011a; Kelly et al., 2014; Maher et al., 2006; Martino et al., 2021; Pauzé et al., 2020; Watson et al., 2016). Similarly, existing studies examining potential social disparities have only explored differences in sponsorship-related outcomes by club-level characteristics (Gonzalez et al., 2020; Kelly, Baur, Bauman, King, et al., 2011a; Martino et al., 2021; Ooi et al., 2019), which does not capture potential differences in exposure that may occur between members of the same club nor differences experienced among demographic subgroups at the population-level. Children's self-reported exposure to food advertising in amateur sports settings, as some research has measured (Hammond et al., 2023), could be used to examine potential disparities in exposure to food company sponsorship. Although self-reported measures have been associated with objective measures of marketing frequency or exposure in certain media and settings and are sensitive to differences or changes in policy environments (Davis et al., 2016; Feighery et al., 2006; Hammond et al., 2020; Romberg et al., 2020; Southwell et al., 2002; Wadsworth et al., 2018; Yong et al., 2008), they are not without their limitations (e.g. recall bias, uncertainty regarding the source of exposure).

1.6 Children’s amateur sports in Canada: Participation, funding and food marketing

1.6.1 Children’s sports participation

According to the most recent national survey, 72% of children aged 5-17 years in 2025 participated in sport in the previous year (Canadian Fitness and Lifestyle Research Institute, 2025a). Sport was defined as physical activities involving “competition, rules and the development of specific skills” (Canadian Fitness and Lifestyle Research Institute, 2022). Most children who engaged in sport did so for six to 12 months of the year (76-77%) and at a frequency of two or more times a week (73-77%) (Canadian Fitness and Lifestyle Research Institute, 2025a). Forty-eight percent of children partook in these activities primarily in community settings while 23 and 28% did so primarily in schools or equally in both settings, respectively (Canadian Fitness and Lifestyle Research Institute, 2025b). Overall, amateur sport settings, particularly community programs, reach many children in Canada, and could potentially allow for prolonged and repeated exposure to food marketing.

Children’s potential exposure to this environment however likely varies given disparities in sport participation that have been documented among child subpopulations in Canada (Canadian Fitness and Lifestyle Research Institute, 2022, 2025a, 2025b; Clark, 2008; Guèvremont et al., 2008; Irvine et al., 2022; ParticipACTION, 2024; Public Health Ontario, 2024). For instance, some evidence suggests sport participation is higher among boys compared to girls, both in terms of the percent who participate and the weekly frequency of their participation (Canadian Fitness and Lifestyle Research Institute, 2022, 2025a; Irvine et al., 2022; ParticipACTION, 2024). The share of younger children (5-11 years) who participate in sport or physical activity with a coach/instructor also appears to be higher compared to their older counterparts (12-17 years), however older children who partake in sport seem to do so more frequently or for longer (Canadian Fitness and Lifestyle Research Institute, 2022, 2025a; ParticipACTION, 2024; Public Health Ontario, 2024). Notably, socio-economic disparities in sport participation have been consistently reported in Canada over the last several decades, with children from lower income or socio-economic status households being less likely to participate than those of higher income or socio-economic status (Canadian Fitness and Lifestyle Research Institute, 2022; Clark, 2008; Guèvremont et al., 2008; ParticipACTION, 2024; Public Health Ontario, 2024). Differential participation by immigration status, urbanicity and ethnicity/race has also been reported previously, with participation in sport

or in physical activity with a coach/instructor found to be higher, though not always consistently, among non-immigrant children, those who identify as White or East Asian and those who live in certain urban areas (Canadian Fitness and Lifestyle Research Institute, 2022; Clark, 2008; Guèvremont et al., 2008; Public Health Ontario, 2024). In sum, disparities in sports participation likely contribute to disparities in children's exposure to sponsorship and food marketing in amateur sport settings. Contrary to other setting or sources of marketing (Acton et al., 2023), sponsorship in amateur sports may disproportionally reach children from households with higher socio-economic status and those who identify as White.

1.6.2 Funding of children's sports in community settings

In Canada, children's sports activities in community settings are generally offered by municipalities, non-profit organizations and/or businesses. Children's sports clubs or associations that are non-profit organizations are generally supported by municipal governments who may provide direct funding (via subsidies or grants) or subsidized rental fees for municipal sports facilities (e.g. pools, soccer fields, arenas, baseball diamonds) (City of Ottawa, 2025a, 2025b; Ville de Montréal, 2025). Grants are also offered by other levels of government (e.g. Ontario's Trillium Foundation), charities (e.g. Foundation Bob Bissonette, JumpStart) or sports organizations to support new programs or specific activities or for capital investments (Fondation Bob Bissonnette, n.d.; Jumpstart, n.d.-a; Ontario Trillium Foundation, n.d.). As non-profit organizations or small businesses, amateur sports organizations can also benefit from certain federal subsidy programs (e.g. Canada Summer Jobs wage subsidy) (Government of Canada, 2021). In terms of sponsorship, it was reported that \$328 million was spent on amateur sports sponsorship in Canada in 2019 however it is unknown how much of this funding was provided by food companies or to children's sports clubs operating at the local level (as opposed to national or provincial sports organizations) (O'Reilly, 2020).

1.6.3 Food marketing in amateur sports settings in Canada

Current evidence suggests amateur sports settings in Canada constitute a source of exposure to food marketing among children, particularly in community settings (Pauzé et al., 2020; Prowse et al., 2018, 2025; Shwed et al., 2023; Vanderlee et al., 2024). Notably, only one study to date has specifically examined the sponsorship of children's sports (Pauzé et al., 2020). This research audited the websites of 67 sports clubs in Ottawa for the five most popular sports among children

including hockey, soccer, basketball, baseball and swimming (Pauzé et al., 2020). It found that 40% of clubs were likely supported by a food-related sponsor, primarily fast food or sit-down restaurants (Pauzé et al., 2020). Notwithstanding, food-related sponsors constituted the minority (16%) of the 312 sponsors identified on club websites (Pauzé et al., 2020). Beyond this research, Tim Hortons and McDonald's Canada have large corporate programs that distribute branded jerseys and other items to more than 360,000 children collectively every year, directing this support to those who play either hockey or soccer (McDonald's Canada, n.d.-a; Tim Hortons, n.d.). Other companies like Gatorade, Biosteel, Subway and Boston Pizza also have partnerships or sponsorship programs that reach or likely reach children who play sports (BioSteel, n.d.; Boston Pizza, n.d.; Gatorade Canada, n.d.; Subway, n.d.).

Canadian studies auditing recreational facilities, including those used for sporting activities, have also found that most of these facilities have food marketing and most instances of food marketing promote products, brands or retailers deemed “less” or “least healthy” (Prowse et al., 2018; Vanderlee et al., 2025). The most recent study audited 134 facilities located in 9 provinces in 2022. It found that 89% of facilities had food marketing (Vanderlee et al., 2025). Of the 2,576 instances of food marketing identified, 42% were in sporting areas and 86% were considered “less healthy” (Vanderlee et al., 2025). Among a subset of these facilities (n=85), 39% of instances of food marketing were found to be linked with current food service contracts or facility sponsors while the source of the remaining food marketing was unknown (Prowse et al., 2025). Notably, the most frequent facility sponsors were fast food restaurants and sugary drink brands, the latter category being advertised a median of nine times in sponsored facilities compared to other types of sponsors, which were advertised a median of once per facility (Prowse et al., 2025).

In schools, no research in Canada has specifically examined the sponsorship of children's sporting activities in this setting (Potvin Kent, Velazquez, et al., 2019; Vanderlee et al., 2024; Velazquez et al., 2015). Some studies however have reported instances of food marketing in sporting areas in schools, though these were very infrequent (Vanderlee et al., 2024; Velazquez et al., 2015). An examination of the websites of provincial high school athletic associations does reveal that some have food-related sponsors, including associations of agricultural producers and some chain restaurants (Alberta Schools' Athletic Association, n.d.; BC School Sports, n.d.; Manitoba High School Athletic Association, n.d.; PEI School Athletic Association, n.d.; School Sport

Newfoundland and Labrador, n.d.). The extent to which this sponsorship results in exposure to food marketing among children is unclear.

1.7 Food marketing policies and sponsorship

1.7.1 Global overview

In 2010, the World Health Organization recommended member countries adopt policies restricting the marketing of unhealthy food and beverages to children and has since published evidence-informed guidance highlighting the need for these restrictions to be government-led and comprehensive enough to limit the migration of unhealthy food marketing to unrestricted media and settings that reach children (World Health Organization, 2010, 2023). In most countries, however, food marketing to children remains unregulated by government or co- or self-regulated by industry (Australian Association of National Advertisers, 2021; Boyland et al., 2018; Range & Berkeley, 2024; Taillie et al., 2019; Théodore et al., 2025; World Cancer Research Fund International, n.d.). Broadly, existing statutory restrictions in Latin America, the United Kingdom and other European countries do not restrict the sponsorship of children's sports by food and beverage companies (Boyland et al., 2018; Government of the United Kingdom, Department of Health and Social Care, 2023, 2024; Taillie et al., 2019; Théodore et al., 2025; World Cancer Research Fund International, n.d.). However, some countries that prohibit unhealthy food marketing in schools (e.g. Uruguay, Portugal) appear to limit sponsorship in this environment (World Cancer Research Fund International, n.d.). Other countries (e.g. Lithuania) also have specific restrictions on energy drink advertising that apply to the sponsorship of sports involving children (Boyland et al., 2018; Health Canada, 2013).

1.7.2 Canadian policy environment

Current and considered federal advertising restrictions

In Canada the adoption of federal food advertising restrictions was on the policy agenda when Prime Minister Justin Trudeau was elected in 2015 and constituted a key component of Health Canada's Health Eating Strategy (Health Canada, 2016; Liberal Party of Canada, 2015). In 2019, the federal government nearly adopted Bill S-228, the *Child Health Protection Act*, which would have restricted the advertising of food and beverages high in saturated fat, sugar and sodium directed to children under 13 years old (Health Canada, 2018b; Parliament of Canada, n.d.-b).

While the restrictions considered at the time would have applied across various media channels and settings, exemptions allowing food companies to sponsor children's sports conditional to some limits on their promotion were proposed to address concerns about the potential impact broader restrictions might have on the accessibility of organized sports (Crowe, 2019; Health Canada, 2018b).

More recently, Bill C-252, a private member's bill very similar to Bill S-228, was introduced in the House of Commons in 2021 (Parliament of Canada, n.d.-a). This bill subsequently died in its third reading in the Senate when Parliament was dissolved in March 2025 (House of Commons, 2025; Parliament of Canada, n.d.-a). Concurrently, Health Canada was developing food advertising regulations that could be introduced using existing enabling authority under the Food and Drugs Act (Health Canada, 2023a, 2025). According to a policy update published in April 2023, these restrictions would have prohibited the advertising of products high in sodium, saturated fat and sugar deemed "primarily directed" to children under 13 years on television and digital media (Health Canada, 2023a). The publication of draft regulations was expected in spring 2024 however they were never published (Winsa, 2025). As of November 2025, the regulation of food advertising to children remains in Health Canada's forward regulatory plan for 2024-2026 though if and/or when draft regulations may be published is unclear (Health Canada, 2025). Though the sponsorship of children's sports was excluded from considered regulations, sponsorship was identified by Health Canada as a key promotional technique to monitor as part of its food marketing surveillance framework (Health Canada, 2023b). So too was food advertising in recreational centers and schools, where children engage in sports (Health Canada, 2023b). Examining social disparities in food advertising exposure by age, gender, ethnicity and socio-economic status were also identified as areas of interest to inform policy (Health Canada, 2023b).

Although there are currently no broad government restrictions on food and beverage marketing, there are some restrictions that apply specifically to caffeinated energy drinks (Health Canada, 2013). These beverages cannot be advertised to children aged 12 years and under (Health Canada, 2013). Given that this restriction applies to "all statements, messages and representations, communicated in any medium and designed to promote the consumption or sale of a food", it can be assumed that these restrictions apply to sponsorship-related advertising involving children

under 13 years (Health Canada, 2013). The provision of free samples to children of this age is also expressly prohibited (Health Canada, 2013).

Quebec's Consumer Protection Act

Compared to the rest of Canada, the province of Quebec has a unique policy environment. Since the 1980s, Quebec's *Consumer Protection Act* (CPA) (1978) has prohibited all commercial advertising (including food advertising) directed at children under 13 years (Consumer Protection Act, 1978). This law essentially restricts the explicit targeting of children in advertising placed in media (e.g. television, radio, print media) and settings (e.g. schools, day cares, malls, festivals or other events) where this population can be reached (Office de la protection du consommateur, 2012). Within this law, "advertisement" is defined as "a message designed to promote goods, services or an organization in Quebec" (Office de la protection du consommateur, 2012). Notably, its application guide also states that "the use of a logo or mascot to represent goods, services, an organization or company constitutes an advertisement" (Office de la protection du consommateur, 2012). To determine whether an ad is directed at children, the CPA considers three factors: 1) "the nature and intended purpose" of the advertised product or service; 2) the advertisement's manner of presentation and 3) when and where the advertisement is presented (Office de la protection du consommateur, 2012). In practice, the CPA prohibits the advertising of products that are specifically intended for children under 13 years in media and settings where they can be exposed (Office de la protection du consommateur, 2012). Examples of these products include toys, certain candy and breakfast cereals, and child-targeted restaurant meals (e.g. Happy Meals). The CPA also prohibits the use of child-directed content in commercial advertising that reaches children, including the use of child-level language, themes related to fantasy and adventure, child characters and imaginary ones (e.g. heroes, talking animals), and music and eye-catching media techniques (e.g. cartoons, special effects) that appeal "especially" to children (Office de la protection du consommateur, 2012). Compliance with the CPA relies on complaints and is not actively monitored.

Notably, Quebec's restrictions do apply to sponsorship (Office de la protection du consommateur, 2012). According to the law's application guide, "the sponsor of an activity for children or families whose products are primarily intended for children or appeal to them cannot, during the event,

present the message in a childlike way or in a manner that would arouse the interest of children” or “use a logo or mascot” (Office de la protection du consommateur, 2012). Sponsors can however “discreetly mention a name that does not draw children’s attention. For example: ‘This event is sponsored by [mention of the name].’”(Office de la protection du consommateur, 2012). Provided examples of food products that may appeal to children include certain desserts, candy and fast food (Office de la protection du consommateur, 2012).

Research suggests Quebec’s CPA has had some positive effects on the advertising environment in Quebec and children’s exposure (Potvin Kent et al., 2011, 2012; Potvin Kent, Guimaraes, et al., 2023; Potvin Kent, Pauzé et al. 2023; Vergeer et al., 2025). On broadcast television, for example, there is less food advertising on child-appealing stations, particularly in French media, and Francophone children aged 2 to 11 years are less exposed to food advertising with child-directed or appealing content (Potvin Kent et al., 2011; Potvin Kent, Guimaraes, et al., 2023). Notwithstanding, both francophone and anglophone children under 13 years in Quebec are still frequently exposed to unhealthy food advertising on broadcast television (Pauzé et al., 2021; Potvin Kent, Guimaraes, et al., 2023). Similarly, according to an online survey conducted in 2023, children aged 10-12 years in Quebec reported less frequent exposure to unhealthy food marketing in digital media compared to their counterparts in Ontario, independent of the time they reported using digital media, and were also less likely to report exposure to digital food marketing featuring certain child-directed or child-appealing content (e.g. promotional characters and child actors, bright colours, special effects and catchy/popular music) (Vergeer et al., 2025). Nevertheless, their exposure to unhealthy food marketing overall was still reported as being frequent (Vergeer et al., 2025). To date, no research has assessed the extent and nature of food company sponsorship of children’s sport clubs in Quebec nor assessed children’s exposure to sponsorship-related advertising and other advertising in children’s sports settings in the province. As such, the potential impact or effectiveness of Quebec’s CPA in this setting is unknown.

Other provincial policies and guidelines

Outside Quebec, some provinces and territories do have policies and/or guidelines pertaining to nutrition or advertising that apply in settings where children engage in sports, namely schools and recreational centres. According to summaries of provincial public sector policies collated up until

January 2023, most of these policies or guidelines focus primarily on the nutritional quality of foods sold in these settings. Some provincial policies or guidelines have provisions pertaining to food promotion (e.g. British Columbia, Atlantic provinces) however none are comprehensive nor seem to be strongly enforced (Vanderlee et al., 2023a, 2023b, 2023k, 2023c, 2023h, 2023j, 2023i, 2023e, 2023l, 2023f, 2023d, 2023g).

Industry self-regulation

In all provinces and territories, except Quebec, advertising directed to children is principally self-regulated by the food and/or advertising industry (Ad Standards, 2025b; Association of Canadian Advertisers et al., 2022). Canada's first self-regulatory code specifically focused on food advertising was called the Canadian Children's Food and Beverage Advertising Initiative (CAI) and was in effect from 2007 to 2020 (Ad Standards, n.d.). The 20 large food and beverage companies and two fast food restaurant chains who had participated over this period had either committed to not advertise their products to children under 12 years at all or to exclusively promote to children of this age products that were consistent with the food industry's own nutrition criteria (Ad Standards, n.d., 2020). This self-regulatory pledge applied to schools (excluding charitable activities) and various media like television, radio, internet, print, video games and DVDs (Ad Standards, 2020). Consistent with research evaluating self-regulatory codes in other countries, the CAI was found to be ineffective (Boyland, McGale, Maden, Hounsome, Boland, & Jones, 2022; Galbraith-Emami & Lobstein, 2013; Kelly et al., 2019; Landwehr & Hartmann, 2020; Potvin Kent et al., 2011, 2018, 2024; Potvin Kent, Pauzé, et al., 2019; Potvin Kent, Soares Guimaraes, et al., 2023; Potvin Kent, Velazquez, et al., 2019; Potvin Kent & Pauzé, 2018; Potvin Kent & Wanless, 2014; Powell et al., 2024; Watson et al., 2017, 2021). Overall, it did not meaningfully improve the healthfulness of children's exposure or potential exposure to food advertising on television, including on child-appealing stations, nor adequately protect children from exposure or potential exposure to unhealthy food advertising in digital media nor in schools (Kelly et al., 2019; Potvin Kent et al., 2011, 2018, 2024; Potvin Kent, Pauzé, et al., 2019; Potvin Kent, Soares Guimaraes, et al., 2023; Potvin Kent, Velazquez, et al., 2019; Potvin Kent & Pauzé, 2018; Potvin Kent & Wanless, 2014). Researchers have attributed the ineffectiveness of the CAI to its very circumscribed scope including its narrow definition of what constituted "child-directed advertising" and its permissive

nutrition criteria (Potvin Kent et al., 2018; Potvin Kent, Pauzé, et al., 2019; Potvin Kent, Velazquez, et al., 2019; Potvin Kent & Pauzé, 2018; Potvin Kent & Wanless, 2014).

In June 2023, industry implemented a new self-regulatory code called the *Code for the Responsible Advertising of Food and Beverage Products to Children* (Association of Canadian Advertisers et al., 2022, 2023). This initiative is endorsed by four industry associations namely the Association of Canadian Advertisers, Restaurants Canada, the Canadian Beverage Association and the Food, Health and Consumer Products of Canada (Association of Canadian Advertisers et al., 2022). According to industry documents, this code limits the advertising of products that exceed nutrient content thresholds for sodium, sugar and saturated fats in a manner that is “primarily directed” to children under 13 years in “any media” including advertising associated with the sponsorship of children’s sports (Association of Canadian Advertisers et al., 2022). Criteria used to determine whether advertising is directed to children include 1) the nature of the product (i.e. whether it is intended for children or appeals specifically to them), 2) the ad’s manner of presentation (i.e. if it features creative content deemed “primarily directed” to children), and 3) when and where the ad is shown (Association of Canadian Advertisers et al., 2022). Although these criteria emulate those used by Quebec’s CPA, they are defined and applied differently and the scope of industry’s commitment is more limited in some respects (Ad Standards, 2025a; Association of Canadian Advertisers et al., 2022). For instance, contrary to Quebec’s CPA, the industry code does not consider the presence of children or the use of an imaginary character (like a cartoon brand character), as content directed to children (Association of Canadian Advertisers et al., 2022; Office de la protection du consommateur, 2012). In the context of sponsorship, the code only applies to related advertising (e.g. signs and jerseys) if a food or beverage product appears. As such, the mention of a product (e.g. “Timbits”) in this advertising seems to be permitted. Available information also explicitly states that the code does not apply to any brand advertising (e.g. branded sports equipment) nor to the provision of samples while making no mention of other forms of promotion associated with sponsorship (e.g. vouchers, coupons, gift certificates) (Association of Canadian Advertisers et al., 2022).

In addition to this advertising code, some companies may also have their own policies pertaining to advertising to children or sponsorship. For example, the Coca Cola Company states that it does

not sponsor children's sports leagues as the company does not advertise to children aged 11 years and under (Coca-Cola Canada, n.d.).

1.8 Rationale and research questions

Rationale and research gaps

Exposure to unhealthy food marketing has been established as a powerful driver of poor dietary behaviours (Boyland, McGale, Maden, Hounscome, Boland, Angus, et al., 2022; Cairns et al., 2013; Hastings et al., 2007; McGinnis et al., 2006; Norman et al., 2016; Qutteina et al., 2019; Smith et al., 2019) and is likely contributing to the dietary and weight problems experienced by Canadian children (Bernstein et al., 2023; Olstad et al., 2021; Polsky et al., 2020; Polsky & Garriguet, 2020; Potvin Kent et al., 2022; Public Health Agency of Canada, 2024; Smith et al., 2021; Vanderlee et al., 2025). The sponsorship of children's sport is one form of marketing that food companies employ to reach young people (Gonzalez et al., 2020; Kelly, Baur, Bauman, King, et al., 2011a; Martino et al., 2021; McDonald's Canada, n.d.-a; Ooi et al., 2019; Pauzé et al., 2020; Subway, n.d.; Tim Hortons, n.d.; Watson et al., 2016). While it is very likely that sports sponsorship influences children (Brown, 2016; Corti et al., 1997; De Jans et al., 2024; Dixon et al., 2019; Kelly, Baur, Bauman, & King, 2011; Pettigrew et al., 2013), little research in Canada has systematically documented the frequency of this practice, characterized the brands promoted by way of sponsorship nor has documented the promotional activities to which children are exposed as a result (Potvin Kent et al., 2022; Prowse, 2017; Vaillancourt et al., 2024). Whether some child subpopulations are more exposed to sponsorship-related advertising in amateur sports is also unknown. Addressing these gaps will help understand the degree to which children's amateur sports is a source of exposure to unhealthy food marketing among children in Canada and a factor potentially contributing to the development of poor dietary behaviours and related social disparities.

Given the federal government's exclusion of sports sponsorship from recently considered food marketing restrictions (Health Canada, 2023a) and the concerns that such restrictions may negatively impact the accessibility of sports (Health Canada, 2017; Sport Matters Group, 2018), understanding the extent to which sports clubs rely on food company sponsorship financially and otherwise is needed to assess the feasibility and potential unintended consequences of restricting

food company sponsorship in Canada. Although the federal government had previously considered exemptions to children's sports sponsorship partly modelled on Quebec's *Consumer Protection Act* (Health Canada, 2018b), no research has examined the effectiveness of Quebec's law in terms of limiting children's exposure to appealing and prominent forms of sponsorship-related advertising. Understanding the potential impact of Quebec's unique sponsorship-related restrictions may ultimately help inform the design of policies in Canada and other jurisdictions.

Broadly, this proposed research sought to examine the extent, nature and potential impact of food company sponsorship of children's sports in Canada's two policy environments. Specifically, the research questions were the following:

1. What is the prevalence of children's exposure to sponsorship-related food advertising² in amateur sports settings in Canada and how does sports team participation and exposure to this advertising vary among socio-demographic subgroups?
2. What type of food companies or brands are children exposed to in amateur sports settings in Quebec and outside Quebec?
3. Does children's exposure to food advertising in amateur sports settings differ between those protected by Quebec's advertising restrictions and those who are not protected?
4. What is the frequency of food company sponsorship of children's sports clubs in Quebec and outside Quebec and what type of food advertising stems from this sponsorship?
5. What in-kind and financial benefits do children's sports clubs derive from food company sponsorship in Quebec and outside Quebec and what is the monetary value of these benefits?

Hypotheses

1. It was expected that children under 13 years protected by Quebec's advertising restrictions will be less exposed to sponsorship-related advertising than those not protected in Quebec and outside Quebec.

²It should be noted that the term "advertising" typically refers to advertising in paid media whereas "marketing" refers to a broader strategy or set of promotional activities used to create a specific brand image and target a specific subset of consumers (American Marketing Association, n.d.). Although sponsorship and many related promotional activities (e.g. branded jerseys, coupons, free food) are considered to be forms of marketing, this research primarily uses the term "advertising" as to be consistent with Quebec's Consumer Protection Act.

2. It was also expected that children under 13 years protected by Quebec's advertising restrictions will be less exposed to the promotion of child-appealing food brands in amateur sports settings than those not protected in Quebec and outside Quebec.

Chapter 2 – Methods and Results

Study 1: Disparities in children’s sports participation and food advertising exposure in amateur sports settings in Canada

Preface

Addressing research questions 1 and 3, this cross-sectional observational study uses national survey data collected by the IFPS in 2019 to examine differences in children’s exposure to food advertising in amateur sports settings among socio-demographic subpopulations and children living in Quebec and other province. Specifically, this survey measured children’s self-reported exposure to the name or logo of a food company or restaurant on signs at their sporting events and on their sports equipment. A copy of the consent/assent forms and the survey are available on the IFPS website (<https://foodpolicystudy.com/methods/>). Ethics approval for this secondary analysis was granted by the University of Ottawa’s research ethics board (H-06-20-5908) and the related certificate of approval is in Appendix I.

In terms of my contribution, I conceptualized the secondary analysis with the help of my co-authors, curated some of the data (i.e. the urbanicity variable), performed the data analysis, prepared the tables, interpreted the results and drafted and reviewed the manuscript. My co-authors also assisted with the analysis as needed (Marie-Hélène Roy-Gagnon), were involved in interpreting the results and revised the manuscript.

Preliminary results from this analysis were presented as a poster at the Annual Conference of the International Society of Behavioral Nutrition and Physical Activity in Uppsala, Sweden in June 14-17, 2023. The poster presentation was entitled “Examining social disparities in youth participation on sports teams and self-reported exposure to food marketing in sports settings in two policy environments in Canada.”

Manuscript title: Disparities in children's sports participation and food advertising exposure in amateur sports settings in Canada

Authors and affiliations:

Elise Pauzé¹, Marie-Hélène Roy-Gagnon², Catherine L. Mah³, Lana Vanderlee⁴, Christine M. White⁵, David Hammond⁵, Monique Potvin Kent²

1. Interdisciplinary School of Health Sciences, University of Ottawa
2. School of Epidemiology and Public Health, University of Ottawa
3. School of Health Administration, Faculty of Health, Dalhousie University
4. School of Nutrition, Centre NUTRISS (Nutrition, santé, société), Université Laval
5. School of Public Health Sciences, University of Waterloo

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Abstract

This study examined social disparities in sports team participation and self-reported exposure to food advertising in amateur sports settings in Canada and examined differences in exposure between Quebec (where commercial advertising directed to children under 13 years, including sponsorship, is restricted) and other provinces (where there are no restrictions). Children aged 10-17 years (n=3,672) completed a cross-sectional online survey in 2019 and answered questions on sports team participation and exposure to food advertising on signs at their sporting events and on their sports equipment. Multivariable logistic regressions were performed to examine differences among socio-demographic subgroups and policy environments. 39.5% of children reported sports team participation with male children and those who perceived their family's income as adequate being more likely to report this. In Quebec, 30.5% and 33.9% of children aged 10-12 and 13-17 years who play sports, respectively, reported exposure to food advertising on signs and/or sports equipment compared to 44.8% and 40.0% in other provinces. Male children were more likely to report exposure on signs and children who perceived their family's income as inadequate were more likely to report exposure on sports equipment. Children outside Quebec were more likely to report exposure on both signs (AOR=1.39; 95%CI:1.04, 1.84) and sports equipment (AOR=1.49; 95%CI:1.06, 2.09). Overall, many children in Canada are exposed to food advertising in amateur sports settings with some subpopulations being more likely exposed. Despite Quebec's restrictions, children under 13 years in the province still reported exposure to food advertising. More research is needed to assess the effectiveness of Quebec's law.

Keywords: Food marketing, sports sponsorship, Consumer Protection Act, brand marketing, corporate social responsibility

Contributions to Health Promotion

- Social disparities in food marketing exposure may be contributing to disparities in diet and health.
- There is limited research on how food advertising in amateur sports settings may disproportionally affect some child subpopulations and how government policies may limit this exposure.
- The likelihood of reporting sports team participation and/or food advertising exposure was found to differ by sex, socio-economic status and policy environment suggesting some child subpopulations in Canada are more at risk of being influenced by food advertising in amateur sports.
- Unique advertising restrictions in the province of Quebec may be limiting advertising exposure but more research is needed.

Background

In Canada, poor diet and excess weight among children constitute considerable population health issues. Over a quarter (27.5%) of children aged 5-17 years are living with excess weight or obesity (Statistics Canada, 2020). Children are also consuming too much sodium, free sugars and foods not recommended by dietary guidelines (e.g. sugary beverages and other ultra-processed foods) while not consuming enough fruit and vegetables (Bernstein et al., 2023; Jones et al., 2019; Polsky et al., 2020; Polsky and Garriguet, 2020; Smith et al., 2021). Notably, poor diet is not experienced equally. Children from households of lower socio-economic status in Canada tend to consume a larger share of their calories from ultra-processed foods and have poorer diet quality (Hutchinson and Tarasuk, 2022; Olstad et al., 2021). Some sex, age and racial/ethnic-based disparities in dietary intake or quality also exist (Riediger et al., 2022; Smith et al., 2021; Warren et al., 2022). For instance, male children consume more sodium and sugary drinks, on average, than their female counterparts and are more likely to experience obesity (Smith et al. 2021; Statistics Canada, 2020; Warren et al. 2022)

Children's poor dietary patterns are partly driven by the food industry's ubiquitous marketing which predominantly promotes highly processed foods (e.g. fast food, confectionaries, sugary drinks) that are energy-dense and nutrient poor (Boyland et al., 2022a; Cairns et al., 2013; Norman et al., 2016). According to the hierarchy of unhealthy food promotion effects model, marketing

shapes the dietary behaviours of children through a series of conscious and unconscious effects that are underpinned by several psychological theories and have been demonstrated empirically (Boyland et al., 2021; Harris et al., 2022; Kelly et al., 2015, 2023; Norman et al., 2018). These effects include increasing awareness of promoted products/brands, linking products/brands with positive attributes, shaping food preferences and social norms, prompting food requests and purchases, and encouraging higher and over consumption of foods which may ultimately lead to weight gain (Kelly et al., 2015, Norman et al., 2018). Children are considered more susceptible to marketing because their cognitive abilities and/or emotional control are not yet fully developed (Carter et al., 2011; Harris et al., 2021; Wilcox et al., 2004).

Food companies are known to sponsor the sporting activities of children and/or community sports facilities in exchange for promotional benefits such as displaying signs and branding in facilities or at events and on sports equipment given to children (Le collectif vital, no date.-a, no date-b; Kelly et al., 2011; Ooi et al., 2019; Pauzé et al., 2020; Prowse et al. 2025; Watson et al., 2016). According to national surveys conducted in 2021, 31 to 43% of children aged 10-17 years who played on a sports team in Australia, Chile, Mexico, the United Kingdom and the United States reported exposure to food advertising on signs at their sporting events while 27 to 34% reported exposure on their sports equipment (Hammond et al. 2023). While this survey did not examine the type of brands children were exposed to in this environment, current evidence, most of which is from Australia, suggests children's sports are often sponsored by food companies associated with unhealthy brands or products (e.g., large fast food restaurant chains) (Gonzalez et al., 2020; Kelly et al., 2011; Little League, 2024; Maher et al., 2006; Martino et al., 2021; McDonald's UK, no date; Ooi et al., 2019; Pauzé et al., 2020; Watson et al., 2016). This is worrisome as studies examining the effects of sports sponsorship among children and/or adults have noted effects or associations consistent with the hierarchy of effects model including the development of implicit and positive brand associations, increased brand awareness, and higher purchase intentions and consumption (Bestman et al., 2015; Brown, 2016; Dixon et al., 2019; Kelly et al., 2011; Pettigrew et al., 2013).

Differential exposure to food marketing among subpopulations is thought to contribute to disparities in dietary patterns and health (Backholer et al., 2021; Castronuovo et al., 2021). In amateur sports settings, differential exposure may stem from differences in sports participation

and/or from inequitable distribution of sponsorship within sports. For instance, research in high-income countries, including Canada, has generally noted a higher prevalence of sports participation among males and children of higher socio-economic position (Canadian Fitness and Lifestyle Research Institute, 2022; Child and Adolescent Health Measurement Initiative, no date; Demetriou et al., 2024; Irvine et al., 2022; Owen et al., 2022; ParticipACTION, 2024; UK Department for Digital, Culture Media and Sport, 2017). As such, these groups may be more exposed to food advertising in amateur sports by virtue of higher participation. In terms of disparities in the distribution of sponsorship, evidence is very limited (Kelly et al., 2011; Martino et al., 2021; Ooi et al., 2019). Some studies from Australia suggested that sponsorship by food-related companies was more likely or frequent among clubs located outside of metropolitan areas and those with predominantly younger participants while no differences were observed between sports clubs situated in areas with varying levels of socio-economic disadvantage (Kelly et al., 2011; Gonzalez et al., 2020; Martino et al., 2021; Ooi et al., 2019).

In Canada, 68% of children aged 5-17 years in 2021 participated in sport (defined as physical activities involving “competition, rules and the development of specific skills”) (Canadian Fitness and Lifestyle Research Institute, 2022). Existing evidence suggest food company sponsorship of children’s sports is common, particularly in community settings (McDonald’s Canada, no date-a; Pauzé et al., 2020; Tim Hortons, no date). For instance, a website audit of 67 sports clubs located in Ottawa, Ontario for the five most popular sports among children, suggested 40% of clubs had a least one food company sponsor and 25% were sponsored by a fast food restaurant (Pauzé et al., 2020). Food advertising in recreational sports facilities, some of which may stem from sponsorship, has also been documented in Canada (Le collectif vital, no date -a, no date -b; Prowse et al., 2018; Prowse et al. 2025;). In schools, the extent of sports sponsorship has not been specifically examined (Potvin Kent et al., 2019; Vanderlee et al., 2024; Velazquez et al., 2015). However, some provincial high school athletic associations report having food-related sponsors (Alberta Schools’ Athletic Association, no date; BC School Sports, no date; Manitoba High School Athletic Association, no date; PEI School Athletic Association, no date; School Sport Newfoundland and Labrador, no date). Six of the 112 Canadian schools surveyed in 2023-24 also reported the presence of unhealthy food advertising on sports equipment or around athletic fields (Vanderlee et al., 2024).

In terms of the policy environment, Canada is unique. Since the 1980s the province of Quebec has prohibited commercial advertising directed to children under 13 years by law in various media and settings including schools and recreational environments (Office de la protection du consommateur, 2012). According to the law's application guide, advertisements cannot promote products designed for children in media and settings where they can be reached nor can advertisements promote these products or those that appeal to children using content explicitly directed to this audience (Office de la protection du consommateur, 2012). Notably, the sponsorship of children's activities is permitted. However, sponsors who sell products intended for- or appealing to- children (e.g. certain candy, fast food and desserts) are in theory not allowed to advertise in ways that "arouse the interest of children" or use mascots and logos. The sponsor's name can be advertised "discreetly" (e.g. signage mentioning the name of the sponsoring company) (Office de la protection du consommateur, 2012). In the rest of Canada, food advertising directed to children is self-regulated by industry. The food industry's former self-regulatory code (2007-2020) did not apply to sponsorship (Ad Standards, no date, 2020). Industry's new code implemented in June 2023 applies to some sponsorship-related advertising, however its scope is very limited (Association of Canadian Advertisers et al., 2022).

Although amateur sports settings constitute a source of exposure to food advertising among children, little is known on the extent and nature of this exposure in Canada and the existence of social disparities in this exposure has yet to be investigated (Potvin Kent et al., 2022; Prowse, 2017). Furthermore, no research has assessed the potential effectiveness of Quebec's sponsorship-related advertising restrictions, which may serve as a potential model for other jurisdictions, particularly as it is one of the few globally to have such restrictions (Boyland et al., 2018; Taillie et al., 2019). As such, the purpose of this study was to 1) estimate the prevalence of exposure to food advertising in amateur sports settings among children in Canada, 2) examine socio-demographic disparities (i.e. social disparities) in sports participation and exposure to this food advertising and 3) examine differences in exposure to food advertising in amateur sports settings between the country's two policy environments (i.e. Quebec and other Canadian provinces). It was hypothesized a priori that children under 13 years protected by Quebec's advertising restrictions would be less likely to report exposure to food advertising than older children in Quebec and those of the same age or older living in other provinces.

Methods: Data are from the Canadian arm of the 2019 International Food Policy Study Youth Survey, an annual repeat cross-sectional survey. Data were collected via self-completed web-based surveys conducted in November-December 2019 with youth aged 10 to 17 years. Respondents were recruited through parents/guardians enrolled in the Nielsen Consumer Insights Global Panel and their partners' panels. Email invitations with unique survey links were sent to adult panelists. Those who confirmed they had a child aged 10 to 17 living in their household were asked to provide consent for their child to complete the survey (only one child per household was invited). After eligibility screening, all potential child respondents were provided with information about the study and asked to provide assent. Surveys were conducted in English or French. Members of the research team who were native francophones reviewed the French translation independently. The child's parent/guardian received remuneration in accordance with their panel's usual incentive structure (e.g., points-based or monetary rewards, chances to win prizes). The primary data collection and this secondary analysis were reviewed by and received ethics clearance through a University of Waterloo Research Ethics Committee (ORE# 41477) and the University of Ottawa (H-06-20-5908), respectively. A full description of the study methods can be found in the International Food Policy Study: Technical Report – 2019 Youth Survey (Hammond et al., 2024).

Outcome measures: To measure sports team participation, children were asked “do you play on a sports team?” and could respond “yes”, “no”, “don’t know” or “refuse to answer”. The latter two responses were considered missing and related cases were excluded from the sample. If children responded yes, their exposure to food advertising in sport settings was assessed by asking them whether there were any names or logos of food or restaurant companies on i) their “sports equipment (like uniforms or water bottles)” and ii) on “signs or banners at their sports practices, games, tournaments, or competitions”. Response options included “yes”, “no”, “does not apply”, “don’t know” and “refuse to answer”. Respondents who selected “yes” were categorised as exposed. Those who responded “no”, “does not apply” or “don’t know” were considered not exposed as none of these respondents recalled being exposed, independent of whether they were in fact exposed or not. Participants were also categorized as exposed to food advertising on signs and/or sports equipment if they reported being exposed to at least one of these two types of advertising.

Socio-demographic characteristics: Child respondents were asked to specify their age, sex, race, perceived income adequacy and province/territory of residence and whether they were born in Canada. Children's province or territory of residence were classified into five regions including the Atlantic provinces (Newfoundland and Labrador, Prince Edward Island, Nova Scotia and New Brunswick), Quebec, Ontario, the Prairies (Manitoba, Saskatchewan and Alberta) and British Columbia. These regions were also grouped by policy environment (i.e., Quebec and other provinces). Sex was reported as male or female. Age was grouped as 10-12 years or 13-17 years to allow for comparisons between children protected by Quebec's advertising restrictions (< 13 years) and those not protected in Quebec and other provinces. Respondents were asked to select the race categories that best described them. Responses included White, East/Southeast Asian, South Asian, Black, Indigenous, Latino, Middle Eastern, West Asian descent, or another race that they could identify using an open text box. Responses were collapsed into five categories: White, East/Southeast Asian, Black, Indigenous inclusive, Mixed/Other racial minority groups. Perceived income adequacy was measured by asking children whether their family had enough money to pay for things their family needed. Responses included "not enough money", "barely enough money", "enough money" or "more than enough money". Respondents were also asked whether, yes or no, they were born in Canada. For all measures described above (excluding age and sex), respondents also had the option of responding "don't know" or "refuse to answer". These responses were treated as missing.

Urbanicity: The city or town in which children resided was specified by parents using an open-text box. Responses were classified as "rural", "small population center (1,000-29,999)", "medium population center (30,000-99,999)" or "large population center (100,000 or greater)" as per Statistics Canada's definitions (Statistics Canada, 2021). It should be noted that Statistics Canada's classification does not necessarily align with city boundaries. For instance, some cities or towns are located at the periphery of larger population centers and some part of their territory is located within a population center while other parts are considered rural. In these cases, cities were classified as being part of the population center. In the specific case of Ottawa, parts of the city are considered rural while other parts are located within population centers of different sizes. If "Ottawa" was reported, this was classified under large population center. If respondents named a town or area within Ottawa that was considered rural or located in a smaller population center, these were classified as such. In cases where the city or town reported by parents conflicted with

the province of residence reported by children (n=18), the parent's response was assumed to be correct, and the region and policy environment category was revised accordingly.

Data analysis: A total of 3,825 children completed the survey. Respondents were excluded for the following reasons: region was either missing, ineligible or reported as being one of Canada's northern territories; invalid response to a data quality question; and/or survey completion time under 10 minutes (n=143). The eight respondents from the Canadian territories were excluded because the number of cases for this region was too small (<15) for the development of data weights. An additional 10 respondents were excluded for missing data on sports team participation. The analytic sample included 3,672 children. Data were weighted with post-stratification sample weights constructed using a raking algorithm with population estimates from the census based on age group, sex, and region. Estimates reported are weighted unless otherwise specified.

Sample characteristics and the prevalence of outcomes were described using absolute and relative frequencies and 95% confidence intervals, overall and by socio-demographic subgroups. Sample characteristics of children who reported playing on a sports team were similarly described by policy environment and potential differences/confounders were explored using standardized differences in proportions (Austin, 2009). The prevalence of reported exposure to food advertising among those who participated on a sports team were also described by policy environment and age group.

Simple and multivariable logistic regression models were used to examine differences in sports team participation among socio-demographic subpopulations. Sociodemographic characteristics considered for inclusion in the multivariable model were those that have been previously associated with this outcome in Canada (Canadian Fitness and Lifestyle Research Institute, 2022; Clark, 2008; Guèvremont et al., 2008; Irvine et al., 2022; ParticipACTION, 2024; Public Health Ontario, 2024). These included: region, urbanicity, and child age, sex, race/ethnicity, perceived income adequacy (as an indicator of socio-economic status) and whether they were born in Canada. Urbanicity was excluded as an independent variable as it did not improve the model based on the likelihood-ratio test nor meaningfully change other parameter estimates (per a threshold of <10%) when included in the model (Hosmer et al., 2013). Simple and multivariable logistic regression models were also conducted to examine socio-demographic differences in reported exposure to food advertising in amateur sports settings including on i) signs, ii) sports equipment and iii) signs

and/or sports equipment. Independent variables included region, age, sex, race/ethnicity, and perceived income adequacy. For multivariable models, race was collapsed into two categories (White/Racial minority groups) due to low frequencies. Urbanicity was considered for inclusion as research has suggested the prevalence of food company sponsorship may vary between metropolitan and more remote regional areas (Gonzalez et al., 2020; Martino et al., 2021; Ooi et al., 2019). This variable was ultimately excluded from models as it reduced the power of our analysis due to missing data and did not improve the model based on the likelihood-ratio test. Similar models were used to examine whether reported exposure to food advertising differed by policy environment and between children aged 10-12 years protected by Quebec's advertising restrictions and those not protected in Quebec or other provinces. These models included policy environment (Quebec/Other provinces; instead of region) and age group and were adjusted for the same socio-demographic variables described above for potential confounding. In separate models, an interaction term (age*policy environment) was included, and least square mean differences were systematically generated to examine differences in reported exposure between subgroups of interest within and between the two policy environments. In all multivariable models, independent variables were included simultaneously. P-values of <0.05 were considered statistically significant. Analyses were performed using SAS and procedures for complex surveys (i.e. proc surveyfreq, proc surveylogistic). Cases with missing or invalid data for socio-demographic characteristics or advertising exposure outcomes (described in **Supplemental Table 1.1, Additional file 1**) were excluded from analyses on a case-by-case basis (i.e. pairwise deletion).

Results

Sample characteristics

An equal number of participants identified themselves as male (51.0%) and female (49.0%). Most participants were aged 13-17 years (62.1%), identified as White (74.3%), were born in Canada (90.0%), lived in a large urban center (67.4%) and perceived their family as having enough or more than enough money to meet their needs (82.4%; **Table 1.1**). The largest share of participants lived in Ontario (39.6%), followed by Quebec (21.5%), the Prairies (20.5%), British Columbia (12.3%) and the Atlantic provinces (6.1%).

Table 1.1 Sample characteristics and prevalence of sports team participation and self-reported exposure to food advertising in amateur sports settings among children aged 10-17 years in Canada in 2019, overall and by socio-demographic subgroup (weighted)

	Total sample			Children who reported playing on a sports team						
	N (% of total) ¹	Played on a sports team		N (% of total) ³	Reported exposure on signs at their sporting events		Reported exposure on their sports equipment		Reported exposure on signs and/or sports equipment	
		n	% yes ² (95% CI)		n	% yes ⁴ (95% CI)	n	% yes ⁵ (95% CI)	N	% yes ⁶ (95% CI)
Total	3672 (100)	1451	39.5 (37.8; 41.1)	1451 (100)	495	34.1 (31.6; 36.6)	319	22.0 (19.8; 24.2)	583	40.2 (37.6; 42.8)
Age										
10-12	1393 (37.9)	582	41.8 (39.1; 44.4)	582 (40.1)	214	36.8 (32.8; 40.8)	136	23.4 (19.9; 26.8)	245	42.1 (38.0; 46.2)
13-17	2278 (62.1)	869	38.1 (36.1; 40.2)	869 (59.9)	281	32.4 (29.1; 35.6)	183	21.1 (18.3; 23.9)	338	39.0 (35.6; 42.3)
Sex										
Male	1871 (51.0)	810	43.3 (41.0; 45.6)	810 (55.8)	304	37.5 (34.1; 40.9)	192	23.7 (20.7; 26.6)	353	43.6 (40.1; 47.0)
Female	1801 (49.0)	641	35.6 (33.3; 37.9)	641 (44.2)	191	29.9 (26.1; 33.6)	127	19.8 (16.6; 23.1)	230	36.0 (32.1; 39.9)
Race/Ethnicity										
White	2678 (74.3)	1061	39.6 (37.8; 41.5)	1061 (74.6)	365	34.4 (31.5; 37.3)	234	22.1 (19.5; 24.6)	432	40.7 (37.7; 43.8)
Racial minority groups	927 (25.7)	362	39.1 (35.8; 42.4)	362 (25.4)	126	34.8 (29.6; 40.0)	80	22.2 (17.6; 26.7)	145	40.2 (34.9; 45.6)
East/Southeast Asian	274 (7.6)	86	31.5 (25.6; 37.4)	86 (6.1)	23	26.7 (16.8; 36.5)	16	18.2 (9.7; 26.6)	26	30.6 (20.3; 40.9)
South Asian	153 (4.2)	66	43.3 (34.9; 51.6)	66 (4.6)	28	42.2 (29.7; 54.7)	19	29.0 (17.4; 40.7)	32	49.1 (36.4; 61.8)
Black	96 (2.7)	39	40.4 (30.2; 50.6)	39 (2.7)	10	25.1 (10.7; 39.6)	10	27.2 (12.0; 42.4)	13	35.0 (18.8; 51.1)
Indigenous inclusive	149 (4.1)	57	37.9 (29.6; 46.3)	57 (4.0)	22	39.5 (25.6; 53.4)	9	15.4 (4.9; 26.0)	25	43.7 (29.7; 57.8)
Mixed/Other	254 (7.1)	114	44.8 (38.5; 51.2)	114 (8.0)	43	37.6 (28.4; 46.8)	26	22.9 (15.0; 30.8)	48	42.4 (33.0; 51.8)
Perceived income adequacy										
Not enough	109 (3.0)	29	26.6 (18.1; 35.1)	29 (2.0)	15	51.3 (32.6; 70.1)	13	43.4 (24.7; 62.2)	18	61.2 (43.2; 79.3)
Barely enough	530 (14.6)	169	31.8 (27.7; 35.9)	169 (11.7)	58	34.6 (27.2; 42.1)	37	22.3 (15.7; 29.0)	69	41.2 (33.5; 49.0)
Enough	2238 (61.8)	884	39.5 (37.4; 41.6)	884 (61.6)	276	31.2 (28.0; 34.3)	182	20.5 (17.8; 23.3)	335	37.8 (34.6; 41.1)
More than enough	746 (20.6)	354	47.4 (43.7; 51.1)	354 (24.6)	141	39.8 (34.6; 45.0)	86	24.4 (19.8; 28.9)	156	44.2 (38.9; 49.5)
Urbanicity										
Large population center	2351 (67.4)	939	39.9 (37.9; 42.0)	939 (67.9)	311	33.1 (30.0; 36.2)	209	22.3 (19.5; 25.1)	373	39.7 (36.5; 43.0)

Medium population center	391 (11.2)	151	38.7 (33.7; 43.6)	151 (10.9)	56	36.9 (29.0; 44.8)	32	21.4 (14.7; 28.0)	62	41.0 (32.9; 49.1)
Small population center	565 (16.2)	223	39.4 (35.3; 43.4)	223 (16.1)	80	36.0 (29.5; 42.4)	34	15.4 (10.5; 20.3)	87	38.9 (32.3; 45.5)
Rural	181 (5.2)	70	38.8 (31.8; 45.7)	70 (5.1)	23	32.5 (21.9; 43.2)	14	19.6 (10.4; 28.8)	29	40.7 (29.3; 52.0)
Born in Canada										
Yes	3298 (90.0)	1300	39.4 (37.7; 41.1)	1300 (89.7)	446	34.3 (31.7; 37.0)	288	22.1 (19.8; 24.5)	528	40.7 (37.9; 43.4)
No	367 (10.0)	150	40.8 (35.6; 46.0)	150 (10.3)	49	32.6 (24.9; 40.3)	31	20.8 (14.2; 27.4)	55	36.6 (28.7; 44.5)
Region										
Quebec	788 (21.5)	259	32.9 (29.9; 35.9)	259 (17.9)	73	28.3 (23.4; 33.3)	44	16.9 (12.7; 21.0)	84	32.5 (27.3; 37.6)
Atlantic provinces	225 (6.1)	96	42.7 (37.2; 48.3)	96 (6.6)	40	41.9 (33.4; 50.4)	26	27.1 (19.5; 34.8)	46	47.8 (39.2; 56.5)
Ontario	1453 (39.6)	572	39.4 (36.8; 42.0)	572 (39.4)	188	32.8 (28.8; 36.8)	134	23.5 (19.9; 27.0)	230	40.3 (36.1; 44.5)
Prairies	754 (20.5)	300	39.8 (36.0; 43.6)	300 (20.7)	114	38.1 (32.0; 44.1)	54	18.2 (13.3; 23.1)	131	43.7 (37.5; 49.8)
British Columbia	453 (12.3)	223	49.4 (44.1; 54.6)	223 (15.4)	80	35.6 (28.7; 42.6)	61	27.1 (20.8; 33.5)	92	41.2 (34.0; 48.4)

¹Sample characteristics of the total sample. Denominator by socio-demographic characteristic: age (n=3672), sex (n=3672), race (n=3604), perceived income adequacy (n=3624), urbanicity (n=3489), born in Canada (n=3665) and region (n=3672).

²Percentage of participants within the subgroup that reported playing on a sports team.

³Sample characteristics of participants who reported playing on a sports team. Denominator by socio-demographic characteristic: age (n=1451), sex (n=1451), race (n=1423), perceived income adequacy (n=1435), urbanicity (n=1383), born in Canada (n=1450) and region (n=1451).

⁴Percentage of sports team participants within the socio-demographic subgroup that reported exposure to food advertising on signs at their sporting event.

⁵Percentage of sports team participants within the socio-demographic subgroup that reported exposure to food advertising on their sports equipment. Outcome data missing for 1 case.

⁶Percentage of sports team participants within the socio-demographic subgroup that reported exposure to food advertising on signs at their sporting event and/or their sports equipment. Outcome data missing for 1 case.

Prevalence of reported sports team participation and differences by socio-demographic subgroup

Overall, 39.5% of children reported playing on a sports team. This prevalence varied among socio-demographic subgroups (Table 1). As shown in the adjusted model in **Table 1.2**, the odds of reporting playing on a sports team were higher among children living in the Atlantic provinces (AOR=1.62, 95% CI: 1.24, 2.12; $p<.001$), Ontario (AOR=1.37, 95% CI: 1.14, 1.64; $p<.001$), the Prairies (AOR=1.43, 95% CI: 1.15, 1.78; $p=.001$), and British Columbia (AOR=2.19, 95% CI: 1.69, 2.84; $p<.001$) compared to those living in Quebec, independent of other socio-demographic characteristics.

The odds of reporting playing on a sports team were also higher among males compared to females (AOR=1.37 95% CI: 1.19, 1.58, $p<.001$) and among children who perceived their family as having enough (AOR=1.97, 95% CI: 1.25, 3.10; $p=.004$) and more than enough money (AOR=2.62, 95% CI: 1.64, 4.20; $p<.001$) to meet their needs compared to those who perceived their family as not having enough. The odds of reporting playing on a sports team were lower among children who identified as East/Southeast Asian (AOR=0.59 95% CI: 0.43, 0.80; $p<.001$) compared to those who identified as White.

Prevalence of reported exposure to food advertising in amateur sports settings and differences among socio-demographic subgroups

Among children who reported playing on a sports team, 34.1% and 22.0% reported exposure to food advertising on signs at their sporting event and on their sports equipment, respectively, and 40.2% reported exposure to at least one type of advertising. The prevalence of reported exposure by socio-demographic subgroups are presented in Table 1 and simple regression models examining differences in reported exposure between these subgroups are presented in **Supplemental Table 1.2 Additional File 1**.

According to adjusted models in **Table 1.3**, the odds of reporting exposure to food advertising on signs were higher among male children compared to female children (AOR=1.43, 95% CI: 1.13, 1.81; $p=.003$). The odds were also higher among children living in Atlantic provinces (AOR=1.81, 95% CI: 1.16, 2.82; $p=.009$) and the Prairies (AOR= 1.61, 95% CI: 1.12, 2.33; $p=.011$), respectively, compared to those living in Quebec.

Table 1.2 Logistic regression models examining socio-demographic disparities in reported participation on a sports team among children aged 10-17 years in Canada in 2019 (weighted)

	Simple Logistic Regressions ¹		Multiple Logistic Regression (n=3562) ²	
	OR (95% CI)	p-value	AOR (95% CI)	p-value
Region				
Quebec	[ref]		[ref]	
Atlantic provinces	1.52 (1.17; 1.98)	.002	1.62 (1.24; 2.12)	<.001
Ontario	1.33 (1.11; 1.58)	.002	1.37 (1.14; 1.64)	<.001
Prairies	1.35 (1.09; 1.66)	.005	1.43 (1.15; 1.78)	.001
British Columbia	1.99 (1.55; 2.55)	<.001	2.19 (1.69; 2.84)	<.001
Age				
10-12 years	1.16 (1.01; 1.34)	.032	1.15 (1.00; 1.33)	.053
13-17 years	[ref]		[ref]	
Sex				
Male	1.38 (1.20; 1.58)	<.001	1.37 (1.19; 1.58)	<.001
Female	[ref]		[ref]	
Race/Ethnicity				
White	[ref]		[ref]	
East/Southeast Asian	0.70 (0.53; 0.93)	.014	0.59 (0.43; 0.80)	<.001
South Asian	1.16 (0.82; 1.65)	.399	1.02 (0.70; 1.49)	.913
Black	1.03 (0.67; 1.59)	.885	1.16 (0.74; 1.81)	.517
Indigenous inclusive	0.93 (0.65; 1.34)	.698	0.90 (0.62; 1.32)	.600
Mixed/Other	1.24 (0.95; 1.62)	.118	1.17 (0.88; 1.56)	.282
Perceived income adequacy				
Not enough	[ref]		[ref]	
Barely enough	1.29 (0.80; 2.07)	.301	1.32 (0.81; 2.15)	.264
Enough	1.80 (1.15; 2.81)	.010	1.97 (1.25; 3.10)	.004
More than enough	2.49 (1.57; 3.94)	<.001	2.62 (1.64; 4.20)	<.001
Born in Canada				
Yes	[ref]		[ref]	
No	1.06 (0.84; 1.33)	.624	1.12 (0.86; 1.45)	.411
Urbanicity				
Large population center	[ref]			
Medium population center	0.95 (0.76; 1.19)	.645		
Small population center	0.98 (0.81; 1.18)	.804		
Rural	0.95 (0.70; 1.29)	.752		

OR: Odd ratio, AOR: adjusted odds ratio, CI: Confidence Interval, ref: reference category.

¹Number of cases included in models: region(n=3672), age (n=3672), sex (n=3672), race (n=3604), perceived income adequacy (n=3624), urbanicity (n=3489) and born in Canada (n=3665).

²Complete case analysis: 120 cases or 3.3% of total sample excluded.

Conversely, the odds of reporting exposure to food advertising on signs were lower among children who perceived their family as having enough money to meet their needs compared to those who perceived their family as not having enough (AOR=0.44, 95% CI: 0.21, 0.95; p=.035).

In terms of food advertising on sports equipment, the odds of reporting exposure were higher among children living in Atlantic provinces (AOR=1.72, 95% CI: 1.04, 2.84, p=.034), Ontario (AOR=1.51, 95% CI: 1.04, 2.19; p=.030) and British Columbia (AOR=1.87, 95% CI: 1.20, 2.92; p=.006), compared to those living in Quebec. The odds of reporting exposure were also lower among children who perceived their family as having barely enough money (AOR=0.38, 95% CI: 0.16, 0.90; p=.028), enough money (AOR=0.35, 95% CI: 0.16, 0.76; p=.008) and more than enough money (AOR=0.42, 95% CI: 0.19, 0.94; p=.034) to meet their needs, compared to those reporting their family as not having enough.

The odds of reporting exposure to food advertising on signs and/or sports equipment were higher among male children compared to female children (AOR=1.38, 95% CI: 1.10, 1.74; p=.005) and higher among those living in the Atlantic provinces (AOR=1.83, 95% CI: 1.19, 2.83; p=.006), Ontario (AOR=1.40, 95% CI: 1.03, 1.90; p=.030) and the Prairies (AOR=1.68, 95% CI: 1.17, 2.39; p=.005) compared to Quebec. The odds of reporting advertising exposure on signs and/or sports equipment were lower among children who perceived their family's income as being enough to meet their needs compared to those who perceived their income as not being enough (AOR=0.40, 95% CI: 0.18, 0.87; p=.022).

Sample characteristics of sports team participants and reported exposure to food advertising by policy environment

The distribution of participants who reported playing on a sports team by age, sex, perceived income adequacy and urbanicity were similar between those living in Quebec compared to those in other provinces (**Supplemental Table 1.3 Additional File 1**). A greater share of children reporting sports team participation in Quebec identified themselves as White exclusively (89.2%) compared to other provinces (71.4%).

Table 1.3 Multiple logistic regression models examining socio-demographic disparities in reported exposure to food advertising on signs at sporting events and on sports equipment among children aged 10-17 years in Canada in 2019 who reported playing on a sports team (weighted)

	Reported exposure on signs at their sporting events (n=1411) ¹		Reported exposure on their sports equipment (n=1410) ²		Reported exposure on signs and/or sports equipment (n=1410) ²	
	AOR (95% CI)	p-value	AOR (95% CI)	p-value	AOR (95% CI)	p-value
Age						
10-12 years	1.19 (0.95; 1.50)	.136	1.15 (0.89; 1.50)	.292	1.13 (0.90; 1.42)	.284
13-17 years	[ref]		[ref]		[ref]	
Sex						
Male	1.43 (1.13; 1.81)	.003	1.26 (0.96; 1.65)	.097	1.38 (1.10; 1.74)	.005
Female	[ref]		[ref]		[ref]	
Perceived income adequacy						
Not enough	[ref]		[ref]		[ref]	
Barely enough	0.49 (0.22; 1.13)	.093	0.38 (0.16; 0.90)	.028	0.45 (0.19; 1.03)	.059
Enough	0.44 (0.21; 0.95)	.035	0.35 (0.16; 0.76)	.008	0.40 (0.18; 0.87)	.022
More than enough	0.64 (0.29; 1.41)	.268	0.42 (0.19; 0.94)	.034	0.52 (0.23; 1.16)	.109
Race/Ethnicity						
White	[ref]		[ref]		[ref]	
Other	1.04 (0.79; 1.38)	.769	0.96 (0.70; 1.32)	.787	0.97 (0.75; 1.27)	.845
Region						
Quebec	[ref]		[ref]		[ref]	
Atlantic provinces	1.81 (1.16; 2.82)	.009	1.72 (1.04; 2.84)	.034	1.83 (1.19; 2.83)	.006
Ontario	1.21 (0.88; 1.66)	.234	1.51 (1.04; 2.19)	.030	1.40 (1.03; 1.90)	.030
Prairies	1.61 (1.12; 2.33)	.011	1.13 (0.72; 1.78)	.597	1.68 (1.17; 2.39)	.005
British Columbia	1.36 (0.91; 2.03)	.133	1.87 (1.20; 2.92)	.006	1.44 (0.98; 2.12)	.064

AOR: adjusted odds ratio, CI: Confidence Interval, ref: reference category.

¹Complete case analysis: 40 cases or 2.8% of participants who reported playing on a sports team were excluded.

²Complete case analysis: 41 cases or 2.8% of participants who reported playing on a sports team were excluded.

In Quebec, 24.7% of children aged 10-12 years and 30.9% aged 13-17 years who played on a sports team reported exposure to food advertising on signs at their sporting event while 17.4% and 16.5%, respectively, reported exposure on their sports equipment (**Table 1.4**). In other provinces, 39.5% of children aged 10-12 years and 32.7% aged 13-17 years reported exposure to food advertising on signs while 24.7% and 22.0%, respectively, reported exposure on sports equipment.

According to the adjusted models in **Table 1.5**, the odds of reporting exposure to food advertising on signs (AOR= 1.39, 95%CI: 1.04; 1.84, p=.025), sports equipment (AOR= 1.49, 95%CI: 1.06; 2.09, p=.022), or to at least one type of advertising (AOR= 1.51, 95%CI: 1.15; 1.99, p=.003), were greater among children living in other provinces compared to those living in Quebec. Some differences in reported exposure between children protected by Quebec's advertising restrictions and those not protected were found to be statistically significant. The odds of reporting exposure to food advertising on signs were higher among children aged 10-12 years living in other provinces compared to children of the same age living in Quebec (AOR=1.98, 95% CI: 1.24, 3.16, p=.005; **Table 1.6**). The odds of reporting exposure to food advertising on signs and/or sports equipment were also higher among both children aged 10-12 and 13-17 years in other provinces compared to those aged 10-12 years in Quebec (AOR=1.86, 95% CI: 1.19, 2.91 p=.006 and AOR=1.55, 95% CI: 1.01, 2.40, p=.047, respectively).

Table 1.4 Prevalence of reported exposure to food advertising in amateur sports settings by age and policy environment among children aged 10-17 years in Canada in 2019 who reported playing on a sports team (n= 1449, weighted)

	Quebec						Other provinces					
	10-12 years (n=108)		13-17 years (n=151)		Total (n=259)		10-12 years (n=474)		13-17 years (n= 716)		Total (n=1190)	
	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)
Exposure on signs at their sporting event	27	24.7 (17.0; 32.5)	47	30.9 (24.5; 37.4)	73	28.3 (23.4; 33.3)	187	39.5 (35.0; 44.1)	234	32.7 (29.1;36.4)	421	35.4 (32.6; 38.3)
Exposure on their sports equipment	19	17.4 (10.6; 24.3)	25	16.5 (11.3; 21.7)	44	16.9 (12.7; 21.0)	117	24.7 (20.7; 28.7)	158	22.0 (18.8; 25.3)	275	23.1 (20.6; 25.6)
Exposure on signs and/or sports equipment	33	30.5 (22.2; 38.7)	51	33.9 (27.3; 40.5)	84	32.5 (27.3; 37.7)	212	44.8 (40.2; 49.4)	287	40.0 (36.2; 43.9)	499	41.9 (39.0; 44.9)

CI: Confidence Interval

Table 1.5 Multiple regression models¹ examining differences in reported exposure to food advertising in amateur sports settings among children aged 10-17 years in Canada who reported playing on a sports team in 2019 by policy environment (weighted)

	Reported exposure on signs at their sporting events² (n=1411)		Reported exposure on their sports equipment³ (n=1410)		Reported exposure on signs and/or sports equipment⁴ (n=1410)	
	AOR (95% CI)	p-value	AOR (95% CI)	p-value	AOR (95% CI)	p-value
Age						
10-12 years	1.19 (0.95; 1.50)	.135	1.15 (0.88; 1.49)	.305	1.13 (0.90; 1.42)	.282
13-17 years	[ref]		[ref]		[ref]	
Policy environment						
Other provinces	1.39 (1.04; 1.84)	.025	1.49 (1.06; 2.09)	.022	1.51 (1.15; 1.99)	.003
Quebec	[ref]		[ref]		[ref]	

AOR: adjusted odds ratio, CI: Confidence Interval, ref: reference category.

¹Models are adjusted for sex (male/female), perceived income adequacy (not enough/barely enough/enough/more than enough) and race (White exclusively/Racial minority groups).

²The p-value for the age*policy environment interaction term tested in a separate model with the same independent and control variables was .043.

³The p-value for the age*policy environment interaction term tested in a separate model with the same independent and control variables was .788.

⁴The p-value for the age*policy environment interaction term tested in a separate model with the same independent and control variables was .209.

Table 1.6 Multiple logistic regression models¹ examining differences in reported exposure to food advertising in amateur sports settings between select age groups within and between Canada's two policy environments among children aged 10-17 years who reported playing on a sports team in 2019 (weighted)

	Reported exposure on signs at their sporting events (n=1411)		Reported exposure on their sports equipment (n=1410)		Reported exposure on signs and/or sports equipment (n=1410)	
	AOR (95% CI)	p-value	AOR (95% CI)	p-value	AOR (95% CI)	p-value
Children aged 10-12 years in other provinces versus those aged 10-12 years in Quebec	1.98 (1.24; 3.16)	.005	1.57 (0.92; 2.69)	.098	1.86 (1.19; 2.91)	.006
Children aged 10-12 years in Quebec versus those aged 13-17 years in Quebec	0.72 (0.43; 1.22)	.220	1.06 (0.57; 1.95)	.862	0.84 (0.51; 1.38)	.495
Children aged 13-17 years in other provinces versus those aged 10-12 years in Quebec	1.50 (0.95; 2.37)	.084	1.35 (0.80; 2.28)	.261	1.55 (1.01; 2.40)	.047
Children aged 10-12 years in other provinces versus those aged 13-17 years in the same provinces	1.32 (1.02; 1.71)	.036	1.16 (0.87; 1.55)	.304	1.20 (0.93; 1.55)	.152

AOR: Adjusted odds ratios, CI: Confidence interval

¹Least mean square differences between subgroups of interest were calculated using multiple logistic models that included age (10-12 years/13-17 years), policy environment (Quebec/other provinces) and the age*policy environment interaction term and were adjusted for sex (male/female), perceived income adequacy (not enough/barely enough/enough/more than enough) and race (White exclusively/Racial minority groups).

Discussion

Summary

Overall, our study found that exposure to food advertising in amateur sports settings was prevalent. Among the 39% of children aged 10-17 years who reported playing on a sports team, one in three reported this exposure on signs at their sporting events and one in five reported exposure on their sports equipment. The likelihood of reporting sports team participation and exposure differed by sex, level of perceived income adequacy and region suggesting some child subpopulations in Canada were more at risk of being exposed to this advertising and potentially influenced by it. In Quebec, children who played on a sports team were less likely than those in other provinces to report exposure to food advertising on signs and their sports equipment suggesting Quebec's advertising restrictions may be conferring some protection from exposure to food advertising. Notwithstanding, nearly one in three children aged 10-12 years who played on a sport teams and were in theory protected by Quebec's law still recalled being exposed to food advertising on signs and/or sports equipment. Overall, these findings are concerning in terms of children's health as existing evidence in Canada suggests that large restaurant chains, whose menu items are predominantly high in calories, sugar, salt and/or saturated fat (Yang et al., 2023), constitute a large share of food-related companies who sponsor children's sports clubs (Pauzé et al., 2020). Observational audits have also found that most food products, brands and retailers promoted in recreational facilities in Canada are considered less healthy (Prowse et al., 2018; Vanderlee et al., 2025).

Social disparities and implications

Notably, our study identified social disparities in reported exposure to food advertising among children who played on a sports team. Specifically, children who identified as male and those who perceived their family's income as inadequate were more likely to report exposure to food advertising than their respective counterparts while no statistically significant differences were noted by age or race/ethnicity. The reasons underpinning disparities by sex and socio-economic position are unclear. They may be related to unequal distribution of sponsorship between sports and differential patterns of sports participation among subgroups. For example, boys are more likely to play hockey in Canada than girls (Hockey Canada, 2024) and current evidence, albeit exploratory, suggests hockey clubs are more likely to be sponsored by food companies than some

other sports (Pauzé et al., 2020) and arenas are more likely to display food marketing than other types of sporting areas in recreational facilities (Prowse et al., 2018). Disparities in exposure may also stem from differential sponsorship seeking behaviours. For instance, clubs in lower income areas may be more likely to seek out sponsorship to support their activities and subsidize participation resulting in higher advertising exposure. Furthermore, our findings depart from research conducted in Australia which found that food-related companies constituted a larger share of sponsors among clubs with mostly ($\geq 75\%$) younger participants aged 5-14 years (Kelly et al., 2011). Other studies also did not observe any differences in food company sponsorship between sports clubs situated in areas of varying levels of socio-economic disadvantage (Gonzalez et al., 2020; Martino et al., 2021; Ooi et al., 2019). Our study however is not directly comparable to previous research. We examined disparities in reported exposure to food advertising in amateur sports settings, some of which may or may not stem from the sponsorship of children's sports, using individual-level data, whereas the research from Australia explored disparities based on club-level characteristics and data on sponsorship.

In addition to noted disparities in exposure among children who play on a sports team, some subgroups may be more likely exposed to food advertising in amateur sports settings in absolute terms due to higher sports participation. For instance, our study found that male children, those from households with an income perceived as adequate and children living outside Quebec were more likely to report playing on a sports team than their respective counterparts. These findings are consistent with other Canadian research, though regional differences in children's sports participation vary between studies and depart somewhat from our findings (Canadian Fitness and Lifestyle Research Institute, 2022; Irvine et al., 2022; ParticipACTION, 2024). Conversely, children who identified as East/Southeast Asian, were female and who perceived their family's income as inadequate were less likely to report sports team participation. At the population level, these groups are probably less likely to be exposed to food advertising in amateur sports settings however they may be less likely to benefit from the positive health and social outcomes associated with playing sports (Boelens et al. 2022, Eime et al., 2013, Eather et al. 2023). While reducing social inequities in sports participation is a laudable goal that should be pursued, our findings suggest it may come at a cost if it is not paired with limiting food marketing in amateur sports settings. For instance, other analyses from the International Food Policy Study (IFPS) noted that children in Canada with lower perceived income adequacy were more likely to report exposure to

certain types of unhealthy food marketing compared to those with higher perceived income adequacy (Acton et al., 2023). Without addressing food marketing, such as sponsorship, increased sports participation among children from lower income households may inadvertently increase existing disparities in food marketing exposure and diet among this subpopulation in Canada (Acton et al., 2023; Hutchinson & Tarasuk, 2022; Olstad et al., 2021).

The extent to which social disparities in food advertising exposure in amateur sports settings contribute to disparities in total exposure across all media and settings and to dietary disparities is difficult to determine. Although male children in our study were more likely to report both playing on a sports team and exposure to food advertising, existing research from the IFPS did not provide evidence that male children are overall more frequently exposed to unhealthy food advertising, including for fast food, than their female counterparts (Acton et al. 2023). The same IFPS research did find that children who identify as East/Southeast Asian in Canada were less likely to report at least weekly exposure to advertising for some unhealthy food categories, namely fast food and sugary drinks, compared to those who identified as White (Acton et al. 2023). While authors suggested these disparities may be attributable to differences in media use, as some data suggested, it is also possible this subpopulation is less exposed to such advertising due to lower participation on sports teams, as our study found (Acton et al. 2023). Given that disparities in exposure by age, sex, race/ethnicity or socio-economic status may be specific to certain media, settings or promotional strategies (Acton et al. 2023), comprehensive marketing restrictions will likely be needed to ensure that all child subpopulations are equally protected from the harmful influence of unhealthy food marketing.

Policy implications

As highlighted above, children who reported playing on a sports team in Quebec were overall less likely to report exposure to food advertising on both signs at their sporting events and on their sports equipment than children living in other Canadian provinces. Children aged 10-12 years in Quebec were also less likely to report exposure on signs compared to children of the same age in other provinces. These findings may be attributable to Quebec's advertising restrictions however this is difficult to ascertain with certainty and if the case, the mechanism underpinning their effect is unclear. Although the province permits advertising in settings frequented by children, this advertising cannot be explicitly directed to children. Sponsorship-related advertising is also

permitted however sponsors that sell products intended for- or appealing to- children under 13 years can only be advertised discreetly and without using a logo or mascot (Office de la protection du consommateur, 2012). Given that advertising is not prohibited outright, it is unclear whether children in Quebec are less likely to report exposure because there is less sponsorship and food advertising or because children are less likely to notice and recall this advertising because it is in fact less appealing and/or prominent, consistent with the province's advertising restrictions. Notably, there is reason to believe the province's sponsorship-related restrictions are not being followed or interpreted consistently. For example, both McDonald's and Tim Hortons have large sports sponsorship programs in Canada that distribute branded jerseys and other items to children however their activities in Quebec diverge. McDonald's sponsorship program is directed to children over 13 years in Quebec while being directed to children aged 9 and 10 years in the rest of Canada (McDonald's Canada, no date – a & b). Tim Hortons' program, on the other hand, is directed to children under 13 years, specifically those aged 4 to 8 years, including in Quebec (Tim Hortons, no date). Considering Tim Hortons likely appeals to children and its program distributes jerseys with their name prominently featured, one would suspect this promotional activity to be inconsistent with Quebec's restrictions.

However, it should be noted that current guidance on the application of Quebec's advertising restrictions contains few details, particularly as it pertains to sponsorship. Little guidance is provided as to what types of companies or brands are considered appealing to children and what constitutes "discreet" forms of advertising (Office de la protection du consommateur, 2012). For instance, it is unclear whether displaying the name of a company or brand on children's sports equipment is in and of itself considered a prominent form of advertising that attracts children's attention or whether this type of advertising could be considered discreet, and as such permitted, depending on the location, size and font of the company or brand name. In addition to this lack of clarity, a survey conducted among a small sample of sports clubs in Quebec in 2022-23 noted little to no awareness of the province's restrictions pertaining to the sponsorship of children's activities, including sports (Pauzé et al. unpublished). Compliance with Quebec's advertising restrictions is also not actively monitored by the government and relies exclusively on complaints made by civil society or members of the public. While some food companies have pleaded guilty to violating Quebec's advertising restrictions and were required to pay a fine, which can reach up to \$100,000 for legal persons, we are not aware of any such instance related to the sponsorship of children's

sports (Le collectif vital, no date - c; Office de la protection du consommateur, 2012). Notwithstanding, the lack of awareness and clear guidance combined with the absence of active monitoring suggests non-compliance may be widespread. Public awareness campaigns, clearer application guidelines and more robust monitoring and enforcement mechanisms are likely needed to ensure the application of Quebec's law.

Non-compliance may partly explain why as many as 25 and 17% of surveyed children aged 10-12 years who reported playing on a sports team in Quebec reported exposure to food advertising on signs and on their sports equipment, respectively. It is also possible that children's reported exposure, particularly on signs at sporting events, stemmed from the sponsorship of older children or other advertising within recreational sports facilities (Le collectif vital, no date -a, no date -b; Prowse et al., 2018; Vanderlee et al., 2025). These factors might also explain why, contrary to our hypothesis, no statistically significant differences in reported exposure to food advertising were observed between children aged 10-12 years protected by Quebec's law and their older counterparts who are not protected. Since our survey did not or could not assess the full nature of the food advertising recalled by children - such as whether it stemmed from sponsorship at all, promoted brands appealing to children, used logos or mascots or was very visible rather than discreet - our study cannot assess compliance with Quebec's law nor assess its potential effect on the nature/content of the advertising recalled by children. More research is needed to examine these questions and determine whether noted differences in reported exposure between Quebec and other provinces are in fact attributable to Quebec's advertising restrictions. Relatedly, our study found that reported exposure to food advertising was not consistently lower in Quebec compared to other provinces when these were disaggregated by region in our models. For instance, observed differences in reported exposure to food advertising on signs at sporting events among children who played on a sports team in Ontario and British Columbia compared to those in Quebec were not found to be statistically significant. Similarly, the observed difference in reported exposure to food advertising on sports equipment between children in the Prairies and those in Quebec was also not statistically significant. These findings cast some doubt as to whether Quebec's law explains noted differences between policy environments and suggest other factors may be at play. While the example of McDonald's sponsorship program being directed to an older age group in Quebec does provide some evidence the province's law is having an impact, differences between policy environments could also partly stem from differences in the cost of-

and the level of public funding for- recreational sports (influencing the need for sponsorship), the number and types of sports played by children and the predominant environment in which children play on sports teams (e.g. school vs community organizations; influencing opportunities for food advertising exposure). Future studies should consider these potentially confounding factors.

Outside Quebec, 35% of children aged 10-17 years who played on a sports team reported exposure to food advertising on signs at their sporting events and 23% reported exposure on their sports equipment. At the time of the survey, the food industry's self-regulatory initiative in Canada did not limit any sponsorship-related advertising (Ad Standards, no date, 2020). Industry's new advertising code, implemented in June 2023, seems to consider the advertisement of any product in the context of children's sports sponsorship permissible, so long as the advertisement does not feature content deemed "primarily" directed to children under 13 years (Association of Canadian Advertisers et al., 2022). Notably, the food industry's definition of child-directed content is very narrow. For example, the presence of children or the use of imaginary characters (e.g. cartoon brand characters), the latter of which is known to be particularly persuasive among children (Packer et al. 2022), are not considered to be child-directed content (Association of Canadian Advertisers et al., 2022). In addition, the self-regulatory code does not limit any brand advertising, such as branding on sports equipment, nor limit other forms of promotion tied to sponsorship like the provision of vouchers or free food (Association of Canadian Advertisers et al., 2022). Given its limited scope, the food industry's new self-regulatory code is unlikely to reduce children's exposure to unhealthy food advertising stemming from sponsorship nor other forms of marketing in recreational sports facilities. As such, governments outside Quebec should consider statutory restrictions on unhealthy food advertising in children's amateur sports settings, including sponsorship, particularly as self-regulation is known to be ineffective (Boyland et al. 2022b). Whether they should emulate Quebec's sponsorship-related restrictions remains an open question. As previously mentioned, the full scope of these restrictions and the extent to which they are in fact being implemented in Quebec are unclear. As a result, their full effect on the frequency and nature of sponsorship-related advertising and children's exposure to- or recall of- this advertising is unknown. The important gaps that may undermine the effectiveness of Quebec's restrictions are also difficult to ascertain without clearer guidance on their application.

Strengths and Limitations

This study is one of the few outside Australia that has examined children's exposure or potential exposure to food advertising related to the sponsorship of children's sports (Hammond et al. 2023; Gonzalez et al., 2020; Kelly et al., 2011; Maher et al., 2006; Martino et al., 2021; Ooi et al., 2019; Pauzé et al., 2020; Watson et al., 2016). This study is also the first in Canada to examine social disparities in food advertising exposure in amateur sports settings and did so using a large national sample. Notably, this research sheds light on the potential effectiveness of Quebec's advertising restrictions, which are unique particularly as it pertains to the sponsorship of children's activities. Nevertheless, the study limitations are important to note. First, respondents were recruited using nonprobability-based sampling; therefore, although the data were weighted by age group, sex and region, the findings do not provide nationally representative estimates. Second, the study's cross-sectional design precludes making any inferences about the impact of Quebec's law. Third, our measure of sports team participation did not specify a recall period nor define "sports team". It is therefore unclear how this measure was interpreted by respondents. In addition to those who played team sports, it is possible some children engaged in individual sports (e.g. tennis, swimming, athletics) at a competitive level may have also identified as playing on a sports team, particularly as these individuals are often a member of a broader competitive team. Fourth, our measure of exposure to food advertising was self-reported and was thus subject to measurement error and recall bias. Notwithstanding, self-reported exposure to marketing has been associated with objective measures of marketing frequency or exposure (Davis et al., 2016; Feighery et al., 2006; Romberg et al., 2020; Southwell et al., 2002) and is known to be sensitive to differences in policy environments and policy changes (Hammond et al., 2020; Wadsworth et al., 2018; Yong et al., 2008). It is thus an appropriate measure for population-level studies. Fifth, although we would have liked to exclusively measure advertising exposure stemming from the sponsorship of children's sports, the source of the recalled food advertising in this study cannot be ascertained. For instance, recalled food advertising on signs at sporting events could have stemmed from the sponsorship of sporting facilities or from point-of-sale marketing in these facilities (Prowse et al., 2018; Prowse et al. 2025). Also, given that our survey items did not refer to a specific environment, it is unclear whether children's exposure to food advertising while playing on a sports team occurred in or outside of school. Future research in Canada should attempt to investigate food marketing in these environments in isolation as they are generally subject to different provincial

policies or guidelines (Prowse, 2017; Prowse et al., 2018). Finally, it should be noted that this secondary analysis was not pre-registered. This study also analyzed data collected before the COVID-19 pandemic and as such may not reflect subsequent patterns or levels of sports participation or food company sponsorship and related advertising.

Conclusion

Our findings suggest many children are exposed to food advertising in amateur sports settings with some subpopulations (e.g. males, children outside Quebec) being more likely exposed. Despite a provincial law limiting the visibility and appeal of sponsorship-related advertising among children under 13 years, children aged 10-12 years in Quebec still reported exposure to food advertising in this setting. More research is needed to assess the nature and potential impact of this advertising and the effectiveness of Quebec's law in limiting children's exposure.

Additional File 1

Supplementary Table S1.1 Frequency of missing data by socio-demographic and outcome variables

Unweighted cases					
	Total sample (n=3682)	Analytic subsample (n=3672)	Among respondents who reported playing on a sports team		
			Quebec (n=322)	Other provinces (n=1117)	Total (n=1439)
Variable	n (%)	n (%)	n (%)	n (%)	n (%)
Region/Policy environment	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Age	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Sex	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Race/Ethnicity	71 (1.9)	68 (1.9)	3 (0.9)	24 (2.1)	27 (1.9)
Perceived income adequacy	47 (1.3)	45 (1.2)	2 (0.6)	13 (1.2)	15 (1.0)
Urbanicity	180 (4.9)	179 (4.9)	9 (2.8)	60 (5.4)	69 (4.8)
Born in Canada	6 (0.2)	5 (0.1)	-	-	-
Plays on a sports team	10 (0.3)	-	-	-	-
Exposure on signs	-	-	0 (0)	0 (0)	0 (0)
Exposure on sports equipment	-	-	0 (0)	1 (0.1)	1 (0.1)
Weighted cases					
	Total sample (n=3682)	Analytic subsample (n=3672)	Among respondents who reported playing on a sports team		
			Quebec (n=259)	Other provinces (n=1192)	Total (n=1451)
Variable					
Region/Policy environment	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Age	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Sex	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Ethnicity	71 (1.9)	67 (1.8)	2 (0.8)	25 (2.1)	27 (1.9)
Perceived income adequacy	50 (1.4)	48 (1.3)	1 (0.4)	14 (1.2)	15 (1.0)
Urbanicity	184 (5.0)	183 (5.0)	7 (2.7)	61 (5.1)	68 (4.7)
Born in Canada	7 (0.2)	6 (0.2)	-	-	-
Plays on a sports team	10 (0.3)	-	-	-	-
Exposure on signs	-	-	0 (0)	0 (0)	0 (0)
Exposure on sports equipment	-	-	0 (0)	1 (0.1)	1 (0.1)

Supplementary Table S1.2 Simple logistic regression models examining socio-demographic disparities in reported exposure to food advertising in amateur sports settings among children aged 10-17 years in Canada who reported playing on a sports team in 2019 (weighted)

	Reported exposure on signs at their sporting events [†]		Reported exposure on their sports equipment [‡]		Reported exposure on signs and/or sports equipment [‡]	
	OR (95% CI)	P-value	OR (95% CI)	P-value	OR (95% CI)	p-value
Region						
Quebec	[ref]		[ref]		[ref]	
Atlantic provinces	1.82 (1.19; 2.79)	.006	1.83 (1.13; 2.98)	.015	1.91 (1.25; 2.90)	.003
Ontario	1.24 (0.91; 1.67)	.174	1.51 (1.06; 2.16)	.024	1.40 (1.05; 1.88)	.023
Prairies	1.56 (1.09; 2.22)	.015	1.09 (0.70; 1.70)	.697	1.61 (1.14; 2.27)	.007
British Columbia	1.40 (0.95; 2.07)	.090	1.83 (1.18; 2.83)	.007	1.46 (1.00; 2.13)	.052
Age						
10-12 years	1.22 (0.97; 1.52)	.090	1.14 (0.88; 1.48)	.315	1.14 (0.92; 1.42)	.241
13-17 years	[ref]		[ref]		[ref]	
Sex						
Male	1.41 (1.12; 1.77)	.003	1.25 (0.96; 1.63)	.091	1.37 (1.10; 1.71)	.005
Female	[ref]		[ref]		[ref]	
Race						
White	[ref]		[ref]		[ref]	
East/Southeast Asian	0.69 (0.41; 1.17)	.167	0.78 (0.44; 1.41)	.418	0.64 (0.39; 1.06)	.081
South Asian	1.39 (0.82; 2.36)	.224	1.44 (0.80; 2.59)	.219	1.41 (0.83; 2.37)	.203
Black	0.64 (0.29; 1.39)	.260	1.32 (0.60; 2.89)	.489	0.78 (0.38; 1.61)	.503
Indigenous inclusive	1.24 (0.69; 2.25)	.474	0.64 (0.28; 1.47)	.296	1.13 (0.63; 2.03)	.680
Mixed/Other	1.15 (0.76; 1.73)	.517	1.05 (0.65; 1.68)	.851	1.07 (0.71; 1.61)	.740
Perceived income adequacy						
Barely enough	[ref]		[ref]		[ref]	
Not enough	0.50 (0.22; 1.14)	.101	0.38 (0.16; 0.88)	.025	0.44 (0.20; 1.02)	.054
Enough	0.43 (0.20; 0.92)	.031	0.34 (0.15; 0.74)	.006	0.39 (0.18; 0.84)	.016
More than enough	0.63 (0.29; 1.37)	.242	0.42 (0.19; 0.94)	.034	0.50 (0.23; 1.11)	.087

Urbanicity						
Large population center	[ref]		[ref]		[ref]	
Medium population center	1.18 (0.82; 1.71)	.374	0.95 (0.62; 1.45)	.802	1.05 (0.73; 1.51)	.780
Small population center	1.14 (0.83; 1.56)	.426	0.63 (0.42; 0.95)	.028	0.97 (0.71; 1.31)	.823
Rural	0.98 (0.59; 1.62)	.923	0.85 (0.46; 1.56)	.599	1.04 (0.64; 1.70)	.878

OR, odds ratio; CI, confidence interval; ref, reference category.

†Number of cases included in models: region (n=1451), age (n=1451), sex (n=1451), race (n=1423), perceived income adequacy (n=1435), and urbanicity (n=1383).

‡Number of cases included in models: region (n=1450), age (n=1450), sex (n=1450), race (n=1422), perceived income adequacy (n=1434) and urbanicity (n=1382).

Supplementary Table S1.3 Sample characteristics of children aged 10-17 years in Canada who reported playing on a sports team in 2019 by policy environment (n=1451, weighted)

	Quebec ¹	Other provinces ²	Standardized difference in proportions ³
	n (%)	n (%)	
Total	259 (100)	1192 (100)	
Age			
10-12 years	108 (41.7)	474 (39.8)	0.039
13-17 years	151 (58.3)	718 (60.2)	
Sex			
Male	151 (58.4)	359 (55.3)	0.063
Female	108 (41.6)	533 (44.7)	
Race/Ethnicity			
White	229 (89.2)	832 (71.4)	0.459
East/Southeast Asian	4 (1.6)	82 (7.1)	-0.272
South Asian	2 (0.9)	64 (5.5)	-0.264
Black	3 (1.0)	36 (3.1)	-0.149
Indigenous inclusive	1 (0.4)	56 (4.8)	-0.279
Mixed/Other	18 (6.9)	96 (8.3)	-0.053
Perceived income adequacy			
Not enough	4 (1.4)	25 (2.2)	-0.060
Barely enough	20 (7.6)	149 (12.7)	-0.169
Enough	172 (66.8)	712 (60.5)	0.131
More than enough	62 (24.2)	291 (24.7)	-0.012
Urbanicity			
Large population center	167 (66.2)	772 (68.3)	-0.045
Medium population center	33 (13.1)	118 (10.5)	0.081
Small population center	39 (15.6)	183 (16.2)	-0.016
Rural	13 (5.2)	57 (5.1)	0.005

¹ Data missing for race/ethnicity (n=2), perceived income adequacy (n=1) and urbanicity (n=7). Denominator by socio-demographic characteristic: age (n=259), sex (n=259), race (n=257), perceived income adequacy (n=258) and urbanicity (n=252).

² Data missing for race/ethnicity (n=25), perceived income adequacy (n=16) and urbanicity (n=61). Denominator by socio-demographic characteristic: age (n=1192), sex (n=1192), race (n=1167), perceived income adequacy (n=1176) and urbanicity (n=1131).

³ Values of ≥ 0.2 were considered indicative of a potential confounder.

Footnotes

Authors' contributions: E.P., M.P.K., C.L.M., M-H.R.G. and L.V. conceptualized this secondary analysis. C.M.W., L.V. and D.H. secured the research funding and collected the data. C.M.W. and D.H. were involved in or oversaw the curation of the data and the administration of the project. E.P. analyzed the data with the assistance of M-H.R.G. M.P.K. supervised this secondary analysis. E.P. prepared the presentation of the results and wrote the first draft. All authors reviewed and approved the final manuscript.

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Conflict of interests: E.P. has received an honorarium from the Stop Marketing to Kids Coalition (2018) and Heart & Stroke (2023) for doing policy and advocacy work related to food marketing to children. She was recently (2023-24) employed by Heart & Stroke on a part-time basis to do work on this topic area. This work and compensation were not related to the current research. D.H. has provided paid expert testimony on behalf of public health authorities in response to legal claims from the food and beverage industry. All remaining authors declare no conflicts of interest.

Ethics approval and consent to participate: Informed consent/assent was obtained from participating children and their parent/guardian. The primary data collection and this secondary analysis were reviewed by and received ethics clearance through a Research Ethics Committee at the University of Waterloo (ORE# 41477) in November 2019 and the University of Ottawa (H-06-20-5908) in August 2020, respectively.

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Study 2: Food-related sponsorship of children's sports club in two Canadian policy environments: A survey of sports club representatives

Preface

Addressing research questions 2, 4 and 5, this cross-sectional observational study examined the benefits that sports clubs derive from food company sponsorship and characterized the type of food marketing stemming from this activity. To do so, a telephone survey was conducted from October 2022 to July 2023 with representatives of children's sports clubs in Ontario and Quebec. For select clubs, an online survey was also sent to team representatives. A copy of the ethics certificate (H-09-21-7089) and surveys are available in Appendix II, III and IV.

In terms of my contribution, I helped secure the research funding and conceptualize study, prepared the ethics application, and oversaw and contributed to all aspects of the planning and execution of the data collection including drafting, reviewing and programming the surveys, identifying sports clubs within sampled cities, sending recruitment letters and emails, and administering the survey to participants (55%; 48/87). I also reviewed all the survey recordings, transcribed relevant survey responses, curated the data, performed the data analysis and drafted and reviewed the manuscript. Research assistants helped identify sports clubs in sampled cities (Carolina Soto [CS]), Mariangela Bagnato [MB] and Meghan Pritchard), programme the surveys (MB), recruit participants and administer the survey (CS and MB) and transcribe some survey responses (CS and MB). Other co-authors helped to secure the funding (Monique Potvin Kent [MPK], Catherine Mah [CM] and Monica Taljaard [MT]), conceptualized the study (MPK and CM) and assisted with the data analysis (MT). All authors reviewed the manuscript.

Preliminary findings were presented to members of the Appetite and Addiction Research Group at the University of Liverpool on June 18th, 2023. This presentation was entitled: "Food company sponsorship of children's sports: It's potential impact and stakeholder perspectives". They were also presented to the project's steering committee members on November 7th, 2023.

Manuscript title: Food-related sponsorship of children's sports club in two Canadian policy environments: A survey of sports club representatives

Authors and affiliations:

Elise Pauzé¹, Mariangela Bagnato², Catherine Mah³, Monica Taljaard⁴, Carolina Soto², Meghan Pritchard², Monique Potvin Kent²

1. Interdisciplinary School of Health Sciences, University of Ottawa
2. School of Epidemiology and Public Health, University of Ottawa
3. School of Health Administration, Faculty of Health, Dalhousie University
4. Ottawa Hospital Research Institute, Clinical Epidemiology Program
5. School of Epidemiology and Public Health, University of Ottawa

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Abstract

This study characterized the food-related companies that sponsor children's sports clubs in two Canadian policy environments and described the benefits of this sponsorship for both clubs and sponsors. Representatives from 350 sports clubs in the province of Ontario (ON; where there are no mandatory advertising regulations) and 182 clubs in Quebec (QC; where there are mandatory limits on sponsorship-related advertising directed at children aged <13 years) were invited to complete an interviewer-administered survey in 2022-23. The response rate was 16%. At least 45% of participating clubs in Ontario (21/47) and 55% in Quebec (22/40) were sponsored by a food-related company. The most frequent type of food sponsor was fast-food restaurants (ON: 50% of sponsors, QC:38%). The most common benefit received from food-related sponsors included direct funding (ON: 21% of clubs; QC: 25%) and in-kind benefits such as uniforms (ON:19%, QC:18%) and free food (ON:15%, QC:28%). Among clubs who received these benefits, their value was small relative to club's total revenue (i.e. $\leq 1\%$ for funding; $\leq 1.5\%$ for in-kind benefits) in most cases. Food-related sponsors were often promoted on uniforms and sports awards, particularly those for children aged ≤ 12 years (ON: 23% and 13% of clubs and QC: 28% and 18%, respectively). Overall, children are exposed to advertising stemming from food company sponsorship in both policy environments. The value of benefits derived from this sponsorship was minimal in most cases. Quebec's restrictions do not appear to be limiting prominent forms of food advertising (e.g. branded uniforms) that reach children aged <13 years.

Keywords: Food marketing, sports sponsorship, Consumer Protection Act, brand marketing, corporate social responsibility, self-regulation

Contributions to Health Promotion

- In Canada, little is known on the types of food companies that sponsor children's sports, the manner they are advertised and the benefits that are derived from this sponsorship.
- According to a survey of 87 children's sports clubs, food company sponsorship appeared to be frequent. Most food sponsors were restaurants and were most often promoted on uniforms, signs, and club websites/social media, and via their products.
- Sports clubs most often received direct funding, uniforms and free food however their total value was small in most cases.
- Unique advertising restrictions in the province of Quebec do not seem to be effective.

Background

Exposure to unhealthy food marketing is a well-established commercial determinant of children's poor dietary patterns and health (Boyland, et al., 2022a; Kelly et al., 2015; Norman et al., 2016, 2018). The sponsorship of amateur sports, whereby companies support sporting activities in exchange for promotional benefits, is one source of food marketing to which children are exposed and influenced by (Brown, 2016; Corti et al., 1997; Dixon et al., 2019; Gonzalez et al., 2020; Kelly et al. 2011a; Kelly et al., 2011b; Martino et al., 2021; Ooi et al., 2019; Watson et al., 2016). Notably, existing research has found that companies or brands associated with unhealthy products (e.g. fast-food restaurants, sugary drinks) are being promoted via the sponsorship of children's sporting activities (Gonzalez et al., 2020; Kelly et al., 2011b; Martino et al., 2021; Ooi et al., 2019; Watson et al., 2016). Sponsorship in this context has been tied to various forms of promotion including branding on sporting equipment used or worn by children, direct exposure to products via their use or sale by sports clubs and advertising on signs at sports events, among others (Gonzalez et al., 2020; Kelly et al., 2011b; Ooi et al., 2019; Watson et al., 2016). In exchange, children's sports clubs can derive some benefits such as direct funding or in-kind support (e.g. free jerseys, sporting awards and food) which may offset some of their costs (Gonzalez et al., 2020; Kelly et al., 2011b).

Since 2010, the World Health Organization has been calling on countries to adopt policies to protect children from unhealthy food marketing and its detrimental dietary effects (World Health Organization, 2010, 2023). In Canada, the policy environment as it pertains to advertising and sponsorship is unique. Quebec is the only Canadian province to have statutory restrictions limiting commercial advertising directed to children under 13 years in several media and settings where they can be reached (Office de la protection du consommateur, 2012) and one of the few globally to limit some advertising related to sports sponsorship in community settings (Boyland et al., 2018; Taillie et al., 2019; Théodore et al., 2025; World Cancer Research Fund International, n.d.). According to the law's application guide, the sponsorship of children's activities is permitted though sponsors selling products intended for children or that appeal to them (e.g. certain candy, desserts, fast food) are prohibited from advertising using a mascot or logo or in a way that "arouses the interest of children" (Office de la protection du consommateur, 2012). Alternatively, the name

of these sponsors should be advertised “discreetly” (e.g. on a sign stating, “this event is sponsored by [company name]”) (Office de la protection du consommateur, 2012).

Outside Quebec, food advertising in Canada remains predominantly self-regulated by industry (Association of Canadian Advertisers et al., 2022). Contrary to the previous self-regulatory code (2007-2020), industry’s newest code, implemented in June 2023, restricts some product advertising stemming from the sponsorship of children’s sports (Ad Standards, n.d., 2020; Association of Canadian Advertisers et al., 2022). The scope of this code however is circumscribed and does not apply to all forms of advertising tied to sponsorship (e.g. branded sports equipment or prizes and the distribution of free food and coupons) (Association of Canadian Advertisers et al., 2022). At the national level, the introduction of restrictions limiting the advertising of foods high in sugar, sodium and saturated fats to protect children’s health has been on the policy agenda in Canada since 2015 (Health Canada, 2016, 2025; Liberal Party of Canada, 2015). In early policy deliberations, some restrictions on advertising stemming from the sponsorship of children’s sports had been considered but these were ultimately excluded from the government’s subsequent policy proposal (Health Canada, 2018, 2023). During consultations and parliamentary debates, stakeholders and lawmakers expressed concerns over the potential impact limits on sponsorship might have on the affordability of children’s sporting activities (Health Canada, 2017; Senate of Canada, 2018; Sport Matters Group, n.d.). To date, no Canadian research has assessed the benefits, monetary or otherwise, that sports clubs (and subsequently their members) receive from food-related sponsors. As such, the potential impact of sponsorship restrictions is unclear.

Nevertheless, current evidence, albeit limited, suggests food company sponsorship may be frequent, particularly in certain sports (McDonald’s Canada, n.d.; Pauzé et al., 2020; Pauzé et al., 2025a; Tim Hortons, n.d.). For instance, the corporate sponsorship programs of two large fast food restaurant chains in Canada collectively provide branded jerseys to more than 350,000 children who play either ice hockey or soccer every year (McDonald’s Canada, n.d.; Tim Hortons, n.d.). Beyond these examples, only a few studies have examined the extent and nature of children’s sports sponsorship and their potential exposure to related advertising (Pauzé et al., 2020; Pauzé et al., 2025a). A small study auditing the websites of 67 children’s sports clubs in Ottawa (Ontario) conducted in 2018 suggested 40% of clubs were supported by food-related sponsors with most (86%) being fast food or sit-down restaurants (Pauzé et al., 2020). How these sponsors were

promoted to children, however, was not examined in this study (Pauzé et al., 2020). In terms of the potential reach of sponsorship-related advertising, a national online survey administered in 2019 among 3,672 children aged 10 to 17 years suggested exposure to food advertising in amateur sports settings was common (Pauzé et al., 2025a). Among the 1451 children who reported playing on a sports team, 34% recalled seeing food advertising on signs at their sporting events while 22% recalled exposure on their sports equipment (Pauzé et al., 2025a). Among children aged 10-12 years protected by Quebec's law, 30% reported exposure on either signs and/or their sports equipment, raising potential questions about the implementation and effectiveness of Quebec's restrictions (Pauzé et al., 2025a). Notably, this study did not assess the types of brands children recalled being exposed to nor could it establish whether this reported exposure was directly linked to the sponsorship of children's sporting activities or was compliant with Quebec's law (Pauzé et al., 2025a).

Overall, no study in Canada, including in Quebec, has attempted to assess the benefits that sports club receive from food-related sponsors nor has examined the type of food advertising stemming from this sponsorship. As such, the primary objectives of this study were to 1) quantify and characterize the food-related companies that sponsor children's sports clubs in Canada's two policy environments; 2) describe the monetary and in-kind benefits sports clubs derive from food company sponsorship and 3) examine the type of food advertising related to this sponsorship.

Methods:

The lead author and two research assistants (RAs) administered a cross-sectional survey over the phone or Microsoft Teams from October 2022 to July 2023 to a stratified convenience sample of representatives of children's sports clubs in the Canadian provinces of Quebec and Ontario. Quebec was selected because of its distinct policy environment and Ontario was selected because it is the most populous province in Canada. Broadly, the survey queried clubs' receipt of sponsorship and other funding during their last completed fiscal year in 2021-22.

Selection and identification of sports clubs: Sport clubs for the eight most popular sports among children aged 5 to 17 years in Canada were selected for inclusion in the study. These were hockey, soccer, baseball, basketball, volleyball, swimming, gymnastics and figure skating (Canadian Heritage, 2013). Sports clubs located in the two most populous cities in Ontario (i.e. Toronto and Ottawa) and Quebec (i.e. Montréal and Quebec City) and those in 5-7 randomly selected small

population centers (defined as having 1,000-29,999 inhabitants) located within 100 km radius from the large cities were identified and included in the sampling frame (Statistics Canada, 2021). More small population centers were selected in the province of Quebec because they were less populated and less likely to have sports clubs in their community.

Sports clubs were identified using municipal sports and recreation directories, the websites of national or provincial sporting organizations and Google searches. Key words used in web searches included the name of the sport and the selected population center, city and/or city neighborhoods or subdivisions. Clubs were eligible to participate if we could establish from their name or website that they had participants aged 17 years and under and operated in selected geographical areas. If we identified sports clubs in a town or village whose website stated they served residents from the selected small population centers, they were included in our sampling frame. Sport clubs that were exclusively for “Junior” level sports team (i.e. a high-level competitive team) were excluded even if some of their players may have been younger than 18 years. Sporting activities organized by municipalities, sporting academies mostly focused on skill development and clubs specifically intended for individuals with disabilities were also excluded. The latter clubs were excluded because we thought this warranted its own study with broader inclusion criteria and adapted search terms.

Recruitment and data collection: All identified sports clubs meeting our selection criteria were invited to participate in our survey. Personalized letters were mailed to sports clubs with publicly available mailing addresses in September 2022 informing them about the study and our intent to contact them in the coming months. Subsequently, the research team contacted clubs up to three times by email (i.e. an initial email that included detailed information about the study and 2 follow-ups) between October 2022 and May 2023. Those who expressed an interest in participating but who had not followed up to schedule a time to complete the survey were contacted two more times in June and July 2023. Our invitation to participate specified that we were interested in surveying a member of the club’s board of directors or another person with knowledge of the club’s revenue and funding sources. When clubs agreed to participate, a list of information we were hoping to collect was sent in advance of our scheduled meeting. They were also sent the consent form via an online survey link. If the participant did not complete the consent form ahead of time, the RA reviewed this information before administering the survey and obtained their consent verbally. The

administration of the survey took a median of 63 minutes was recorded with the permission of participants. Sports clubs received \$50 for their participation. The study was reviewed and approved by the University of Ottawa research ethics committee (File H-09-21-7089). The lead author reviewed all survey recordings.

Survey development: The survey questionnaire was partly modelled after a previously developed telephone survey (Kelly, 2012; Kelly et al., 2011b). Some survey items were modified to collect more detailed information about the benefits received from food company sponsors and the age groups exposed to some of the sponsorship-related advertising. The survey was piloted in March-May 2022 among 7 clubs from 6 different sports in Ontario located outside the sampled cities and was subsequently reviewed and professionally translated into French. A survey directed at team representatives was also created for clubs whose teams seek their own sponsors.

Survey measures and data handling

Club characteristics and sources of funding: The survey queried the role of the respondent (e.g. President, Treasurer) as well as the characteristics of their club (e.g. number and socio-demographic characteristics of club members, whether it was a not-for-profit organization, their total club revenue). Respondents were also asked whether they received grants or funding from the government, charitable organizations and sporting organizations with which they were affiliated and whether they engaged in fundraising activities. If they responded affirmatively, the source and amount of funding and the fundraising activities were recorded.

Sponsorship and classification of sponsors: Respondents were asked whether the club or their teams received sponsorship including from local businesses, larger companies, city councillors, industry associations or other types of sponsors, and if so, to specify the number and name of sponsors and whether each one was a minor or major sponsor (the latter was defined as providing \$1500 or more in direct funding or in-kind donations) and their total revenue from sponsorship. Generally, businesses, individuals or organizations (excluding governments, charities and sports organizations captured by other questions) who provided a benefit to the club or its members (e.g. money, in-kind contribution, discount) and who received some kind of acknowledgement or visibility were recorded as sponsors. If a food-related sponsor was reported, respondents were asked what their club had received from this sponsor including direct funding, equipment, uniforms, coupons, free or discounted food for players/athletes or spectators or anything else. If

relevant, the amount of funding and the estimated value of in-kind benefits were recorded. They were also asked how these sponsors were advertised (e.g. on uniforms, equipment, sporting awards, signs, and website/social media, via naming rights or other means) and which age group were reached by some of this advertising (e.g. was the sponsors name or logo on the uniform of children aged 12 years and under or those aged 13 to 17 years). To help minimize recall bias, respondents were probed about the companies or organizations that appeared on their website, if any, and whether they constituted sponsors during the recall period.

Clubs that reported being sponsored were also asked whether individual teams belonging to the club sought sponsorship independently and whether they were able to report information on these sponsors. If they could not provide this information, clubs were asked whether they were willing to distribute a short online survey with team representatives from the recall period. If it was possible and they agreed, an email invitation to participate, including a survey link, was sent to the club respondent and was subsequently forwarded to team representatives. Up to two follow-up emails were sent. The team survey queried the number and name of sponsors and benefits of sponsorship for both the team and sponsors. Reported team sponsors were added to those reported at the club-level.

Food-related sponsors were categorized by type of company including fast food restaurants (i.e. those where food is ordered at a counter), sit-down restaurants (i.e. those where food is ordered and served at a table), retailers (e.g. grocery stores, butcher shops, bread and dessert bakeries), food and beverage manufacturers, and agricultural businesses or associations (e.g. farms, special interest groups). Restaurant sponsors were further classified as being a large chain (≥ 20 locations nationally), a smaller chain (2-19 locations) or as having a single location (Government of Ontario, 2016).

Club policies and awareness of restrictions: Respondents were asked whether they had or planned to have a written policy on sponsorship and fundraising. Policy was broadly defined as any written rules, guidelines or plans that guide decisions about sponsorship. Those who responded affirmatively were asked whether their club had rules about the types of sponsoring companies. Clubs in Quebec were also asked whether they were aware of provincial rules or restrictions pertaining to the sponsorship of children's activities, including sports. Participants who said they were aware but reported these restrictions as not being related to advertising directed to children

or who could not state the nature of these restrictions, were classified as “not aware”. Participants who initially said they were not aware but later mentioned these restrictions were classified as being “aware”.

Statistical analysis: Frequencies, relative frequencies, medians and interquartile ranges (IQR; reported as 25th-75th percentile) were used to describe club characteristics and outcomes. These were tabulated by province and for the total sample. These descriptive analyses were performed using SPSS Statistics version 30 (IBM, 2024).

Results:

Sample and recall period

A total of 532 sports clubs were identified and invited to participate in the study. Overall, 87 clubs (16%) completed the survey. The response rate was higher among sports clubs in Quebec (22%; 40/182) compared to Ontario (13%; 47/350) and varied by sport and city size (**Supplemental Table S2.1**). The recall period for 93% of clubs was their fiscal year ending in 2022 (**Supplemental Table S2.2**).

Of the 61 clubs who reported receiving sponsorship, 30 reported that some of their teams sought their own sponsors. Of these 30 clubs, 6 were able to report all team sponsors, 6 could report most or some, 15 could not report any and 3 did not think any of their teams were sponsored during the recall period (**Supplemental Table S2.3**). Nine clubs agreed to send the online survey to team representatives. The number of responses per club varied from 2 to 18, for a total of 54 valid responses obtained from 6 clubs (data not shown).

Characteristics of respondents and sports clubs

As shown in **Table 2.1**, most sports clubs in both provinces were non-profit organizations (98-100%), operated in large cities (85-92%) and offered both recreational and competitive programs (75-77%). In Ontario, clubs had a median of 382 participants (IQR 138-737) and median total revenue of \$391,500 (IQR: \$135,175-\$593,750). Hockey (34%) and figure skating (17%) made up the largest share of participating clubs. In Quebec, clubs had a median of 403 participants (IQR:202-927) and median total revenue of \$200,000 (IQR: \$70,550-\$595,500). Soccer, (30%), figure skating (15%) and baseball (15%) constituted the largest share of clubs.

Table 2.1 Characteristics of children's sports clubs, overall and by province (n=87 sports clubs)

	Ontario		Quebec		All clubs	
	N		N		N	
Sport, n (%)	47		40		87	
Hockey		16 (34)		5 (12)		21 (24)
Soccer		5 (11)		12 (30)		17 (20)
Figure skating		8 (17)		6 (15)		14 (16)
Baseball		6 (13)		6 (15)		12 (14)
Basketball		6 (13)		3 (8)		9 (10)
Swimming		3 (6)		3 (8)		6 (7)
Gymnastics		1 (2)		4 (10)		5 (6)
Volleyball		2 (4)		1 (2)		3 (3)
Location, n (%)	47		40		87	
Large city		43 (92)		34 (85)		77 (89)
Small population center		4 (8)		6 (15)		10 (11)
Not-for-profit organization n, (%) yes	47	46 (98)	40	40 (100)	87	86 (99)
Type of programs/teams, n (%)	47		40		87	
Recreational		3 (6)		8 (20)		11 (13)
Competitive		8 (17)		2 (5)		10 (11)
Both		36 (77)		30 (75)		66 (76)
Has an adapted program or specialized coaching available for children with disabilities, n (%) yes	47	4 (9)	40	5 (13)	87	9 (10)
Number of participants, min-max, median (IQR ¹)	45	36-3000 382 (138-737)	40	55-4770 403 (202-927)	85	36-4770 400 (183-772)
n (%)	45		40		85	
36-198		15 (33)		9 (22)		24 (28)
200-550		14 (31)		17 (43)		32 (37)
600-963		10 (22)		5 (12)		15 (17)
1011-4770		6 (13)		9 (23)		15 (17)
Share of participants who are male, n (%)	47		40		87	
None to < 1/4		7 (15)		10 (25)		17 (20)
≥ 1/4 and <1/2		9 (19)		5 (12)		14 (16)
≥ 1/2 and 3/4		11 (23)		15 (38)		26 (30)

> 3/4 to All		20 (43)		10 (25)		30 (34)
Share of participants who are youth under 18 years, n (%)						
> 3/4 to All	45	44 (98)	40	34 (85)	85	78 (92)
Share of youth participants who are under 13 years, n (%)						
None to <1/2	45	11 (24)	40	3 (7)	85	14 (16)
≥ 1/2 and 3/4		20 (44)		18 (45)		38 (45)
> 3/4 to All		14 (31)		19 (48)		33 (39)
Total revenue, CAD ² , min-max, median (IQR ¹)	40	8,250 – 4,000,000 391,500 (135,750-593,750)	37	6,300-2,005,000 200,000 (70,550-595,500)	77	6,300 – 4,000,000 302,000 (110,000-594,000)
n (%)						
6,300-80,300		4 (10)		13 (35)		17 (22)
110,000-350,900		16 (40)		12 (32)		28 (36)
413,500-961,000		15 (37.5)		9 (24)		24 (31)
1,300,000-4,000,000		5 (12.5)		3 (8)		8 (10)

¹IQR: Interquartile range, presented as the 25th-75th percentile. ²CAD: Canadian dollar.

Sponsorship and other sources of revenue

In Ontario, 66% of clubs reported the receipt of sponsorship. The number of reported sponsors ranged from 0 and 54 and the median number per club was 2.5 (IQR: 0-6). Club revenue derived from all sponsorship ranged from 0 to \$124,600 and the median revenue was \$800 (IQR: \$0-\$10,000). Sponsorship accounted for >0-5% of total revenue for 39% of clubs, >5-15% for 7% and 15-50% for 5% of clubs. A minority of clubs received funding from the government (excluding Covid-related assistance; 13%), charities (9%) and sporting organizations (43%) and engaged in fundraising activities (38%) (**Supplemental Table S2.4 and S2.5**).

In Quebec, 75% of clubs reported the receipt of sponsorship. The number of reported sponsors ranged from 0 and 53 and the median number per club was 4 (IQR: 0-9). Club revenue derived from all sponsorship ranged from 0 to \$200,000 and the median revenue was \$1900 (IQR: \$0-\$14,500). Sponsorship accounted for >0-5% of total revenue for 33% of clubs, >5-15% for 21% and 15-35% for 5% of clubs. Most (70%) clubs received funding from the government (excluding covid-related assistance) while the minority received funding from charities (10%) and sporting organizations (38%) and engaged in fundraising activities (33%).

Food company sponsorship of children's sports clubs in Ontario

As shown in **Table 2.2**, at least 45% of clubs in Ontario were sponsored by a food-related company with the number of reported sponsors ranging from 0 to 7 and the median number being 0 (IQR: 0-1.5). Of the sports clubs that had an adapted program for children with disabilities (n=4), none reported that these programs were sponsored by a food company (data not shown). Food-related sponsors constituted 18% of total sponsors (**Supplemental Table S2.6**). Of these sponsors, 38% were “major” sponsors. The most frequent type of food related sponsors reported were fast-food restaurants (50% of sponsors), followed by sit-down restaurants (26%), retailers (11%; all grocery stores; data not shown) and food and beverage manufacturers (11%; **Table 2.3**). Sixty-six percent of restaurant sponsors were large chains. Thirty-two percent of clubs were sponsored by a fast-food restaurant and 17% were sponsored by a sit-down restaurant.

Table 2.2 The percentage of sports clubs who received sponsorship from a food-related sponsor and other types of sponsors and benefits provided by and given to these food-related sponsors, overall and by province (n=87 sports clubs)

	Ontario		Quebec		All clubs	
	N		N		N	
Food-related sponsorship						
Receipt of sponsorship from a food-related company, n (%) yes ¹	47	21 (45)	40	22 (55)	85	43 (52)
Number of reported food sponsors, min-max, median (IQR ²)	45	0-7 0 (0-1.5)	40	0-10 1 (0-3)	85	0-10 1 (0-2)
One or more food sponsors considered major, n (%) yes	47	10 (21)	39	13 (33)	86	23 (27)
Receipt of sponsorship by type of food-related sponsor, n (%) yes¹	47		40		87	
Fast food restaurant		15 (32)		18 (45)		33 (38)
Sit-down restaurant		8 (17)		11 (28)		19 (22)
Food retailers		5 (11)		11 (28)		16 (18)
Agricultural businesses/organizations		1 (2)		2 (5)		3 (3)
Food and beverage manufacturers		4 (9)		6 (15)		10 (12)
Benefits received from food sponsors, n (%) yes¹	47		40		87	
Direct funding		10 (21)		10 (25)		20 (23)
In-kind benefit		17 (36)		17 (43)		34 (39)
Uniforms		9 (19)		7 (18)		16 (18)
Equipment		4 (9)		12 (30)		9 (10)
Medals/Trophies		6 (13)		7 (18)		13 (15)
Free food		7 (15)		11 (28)		18 (21)
Free food for players		6 (13)		7 (18)		13 (15)
Free food for spectators		3 (6)		2 (5)		5 (6)
Free food for volunteers		0 (0)		2 (5)		2 (2)
Free food for resale		0 (0)		2 (5)		2 (2)
Coupons		3 (6)		5 (13)		8 (9)
Gift certificates		0 (0)		3 (8)		3 (3)
Member discount		0 (0)		2 (5)		2 (2)
Store credit		1 (2)		1 (3)		2 (2)
Gifts for players		3 (6)		1 (3)		4 (5)
Promotional benefit provided to a food related sponsor, n (%) yes¹	47		40		87	
Name or logo on uniforms		12 (26)		12 (30)		24 (28)
Children aged ≤12 years		11 (23)		11 (28)		22 (25)
Children aged 13-17 years		2 (4)		7 (18)		9 (10)
Name or logo on equipment		4 (9)		5 (13)		9 (10)
Children aged ≤12 years		4 (9)		5 (13)		9 (10)
Children aged 13-17 years		1 (2)		0 (0)		1 (1)
Name or logo on sports awards		6 (13)		7 (18)		13 (15)
Children aged ≤12 years		6 (13)		7 (18)		13 (15)
Children aged 13-17 years		1 (2)		1 (3)		2 (2)
Naming rights for a team or association of the sponsor's name with that of team ³		3 (6)		2 (5)		5 (6)

Children aged ≤12 years		3 (6)		2 (5)		5 (6)
Children aged 13-17 years		0 (0)		0 (0)		0 (0)
Naming rights for an event		1 (2)		3 (8)		4 (5)
Children aged ≤12 years		1 (2)		1 (2)		2 (2)
Children aged 13-17 years		0 (0)		0 (0)		0 (0)
Signs at sporting events		3 (6)		11 (28)		14 (16)
Promotion on the club or team website or social media page		17 (36)		16 (40)		33 (38)
Use of products ⁴		6 (13)		8 (20)		14 (16)
Advertising in an event program		1 (2)		1 (3)		2 (2)
Earn media		1 (2)		1 (3)		2 (2)
Email or newsletter		1 (2)		3 (8)		4 (5)
Public announcement		0 (0)		3 (8)		3 (3)
Presence at an event		0 (0)		2 (5)		2 (2)
Other		2 (4)		1 (3)		3 (3)
Other sponsors						
Receipt of sponsorship from “other sponsors” (i.e. not food related), n (%) yes ¹	47	27 (57)	40	29 (73)	87	56 (64)
Receipt of sponsorship from an alcohol manufacturer, n (%) yes ^{1,5}	47	0 (0)	40	2 (5)	87	2 (2)
Receipt of sponsorship from a gambling-related organization, n (%) yes ¹	47	3 (6)	40	2 (5)	87	5 (6)

¹Cases with sponsorship data known to be missing or incomplete were not excluded from the analysis. Relative frequencies may be underestimated. ²IQR: Interquartile range, presented as the 25th-75th percentile.

³Some teams integrated the name of a food sponsor into the name of teams without it necessarily being an obligation. ⁴Derived from sponsors who provided free food, excluding grocery stores because the provision of- and exposure to- products from their house brands was generally unclear. ⁵In both cases, this sponsor was for adult teams. One of these clubs reported that the revenue generated from this sponsorship was used to fund children’s sporting activities.

Table 2.3 Characteristics of food-related sponsors, overall and by province (n=118 sponsors)

	Ontario		Quebec		All clubs	
	N	n (%)	N	n (%)	N	n (%)
Type of food-related sponsor	46		72		118	
Fast food restaurants		23 (50)		27 (38)		50 (42)
Sit-down restaurants		12 (26)		15 (21)		27 (23)
Retailers		5 (11)		21 (29)		26 (22)
Agricultural businesses/ organizations		1 (2)		3 (4)		4 (3)
Food or beverage manufacturers		5 (11)		6 (8)		11 (9)
Type of restaurants	35		42		77	
Large chains (≥ 20 locations)		23 (66)		18 (43)		41 (53)
Smaller chains (2-19 locations)		2 (6)		10 (24)		12 (16)
One location		10 (29)		14 (33)		24 (31)

Twenty-one percent of clubs in Ontario reported receiving direct funding from food-related sponsors. The total amount received ranged from \$300 to \$23,750. Funding from these sponsors accounted for >0-1% of total revenue for 10% of clubs and >1-6% for 5% of clubs (**Table 2.4**). Thirty-six percent of clubs in Ontario received an in-kind benefit from food-related sponsors. The most frequently provided benefit was uniforms (provided by 35% of sponsors), free food (23%), mostly for players (20%), and sports awards/medals (14%; **Table 2.5**). The share of clubs receiving uniforms, free food and sports awards was 19, 15 and 13%, respectively. The perceived total value of in-kind benefits ranged from \$100 to \$21,000 and the median value was \$2,310 (IQR: \$1,062-\$10,612).

Food-related sponsors were most often promoted on club or team websites or social media pages (81% of sponsors) and on uniforms (63%) and sports awards/medals (19%), particularly those for children aged ≤ 12 years (54% and 19%, respectively). Promotion on websites or social media pages was reported by 36% of sports clubs while the promotion on uniforms and sports awards/medals was reported by 26 and 13% of clubs, respectively. Fast food restaurants were the most frequent type of food sponsor promoted on uniforms, sports equipment and sports prizes worn or given to children aged 12 and under (**Supplemental Table S2.7**).

Food company sponsorship of children's sports clubs in Quebec

In Quebec, at least 55% of clubs were sponsored by a food-related company with the number of reported sponsors ranging from 0 to 10 and the median number being 1 (IQR: 0-3). Of the sports clubs that had an adapted program for children with disabilities (n=5), none reported that these programs were sponsored by a food company. Food-related sponsors constituted 27% of total sponsors. Of these sponsors, 39% were “major” sponsors. The most frequent type of food related sponsors reported was fast-food restaurants (38% of sponsors), followed by retailers (29%), particularly grocery stores (21%), and sit-down restaurants (21%). Forty-three percent of restaurant sponsors were large chains. Forty-five percent of clubs were sponsored by a fast-food restaurant and 28% were sponsored by a sit-down restaurant and a food retailer.

Twenty-five percent of clubs received funding from food-related sponsors. The total amount received ranged from \$50 to \$106,000. Funding from these sponsors accounted for >0-1% of total revenue for 18% of clubs and >1-6% for 5% of clubs (Table 3). Forty-three percent of clubs in Quebec received an in-kind benefit from food-related sponsors. The most frequently provided

benefit was free food (provided by 38% of sponsors; mostly for players), uniforms (11%), sports awards/medals (10%) and coupons (10%). The share of clubs receiving free food, uniforms, sports awards and coupons was 28, 18, 18 and 13%, respectively. The perceived total value of in-kind benefits ranged from \$1000 to \$80,000 and the median value was \$5,500 (IQR: \$3,075-\$20,125).

Food-related sponsors were most often promoted on club or team websites or social media pages (64% of sponsors), on signs at sporting events (55%) and on uniforms (40%) of both children aged 12 and under (35%) and those aged 13-17 years (27%). Promotion on websites or social media pages and signs was reported by 40 and 28% of sports clubs, respectively. Promotion on the uniforms of children aged 12 and under was reported by 28% of clubs whereas promotion on the uniforms of older children was reported by 18% of clubs. Fast food restaurants were the most frequent type of food sponsor promoted on uniforms, sports equipment and sports prizes worn or given to children aged 12 and under.

Club policies on sponsorship and awareness of current restrictions in Quebec

Forty-five percent of clubs in Ontario and 38% in Quebec reported having a written policy on sponsorship (**Table 2.6**). Of these clubs, 42% in Ontario and 20% in Quebec reported having rules regarding the type of companies they accept sponsorship from. Companies they would not accept sponsorship from included those related to alcohol (n=10), tobacco (n=8), gambling (n=4), cannabis or drugs (n=5), sex (n=2), weapons (n=1) and “junk food” (n=1). At least 13 other clubs mentioned they had similar rules that were informal or unwritten.

Most (95%; 37/39) clubs in Quebec did not appear to be aware of the province’s restrictions pertaining to the sponsorship of children’s activities, including sports. Five clubs mentioned the province’s restriction on child-directed advertising during the survey. Two respondents were aware these restrictions applied to sponsorship-related advertising while two others said they were not sure whether these restrictions applied to sponsorship (data not shown).

Table 2.4. Total amount of direct funding and value of in-kind benefits received from food-related sponsors, overall and by province (n=87 sports clubs)

	Ontario		Quebec		All clubs	
	N		N		N	
Direct funding						
Amount of funding from food-related sponsors, CAD, min-max, median (IQR ¹)	41	0-23,750 0 (0-0)	39	0-106,000 0 (0-0)	80	0-106,000 0 (0-0)
Share of total revenue, %, min-max, median (IQR ¹)	39	0-2.8 0 (0-0)	39	0-5.6 0 (0-0)	78	0-5.6 0 (0-0)
Share of total revenue, n (%) ²						
0		34 (87)		30 (77)		64 (82)
>0-1%		3 (8)		7 (18)		10 (13)
>1-6%		2 (5)		2 (5)		4 (5)
In-kind benefits						
Receipt of an in-kind benefit, n (%) ³	47	17 (36)	40	17 (43)	87	34 (39)
Perceived monetary value of in-kind benefits, CAD ⁴ , min-max, median (IQR ¹)	10	100-21,000 2,307 (1,062-10,612)	13	1,000-80,000 5,500 (3,075-20,125)	23	100-80,000 3,800 (1,615-10,250)
n (%)						
\$100-\$1,820		5 (50)		2 (15)		7 (30)
\$3,000-\$4,500		2 (20)		4 (31)		6 (26)
\$5,500-\$12,450		2 (20)		4 (31)		6 (26)
\$21,000-\$80,000		1 (10)		3 (23)		4 (17)
Perceived value of in-kind benefits as a percentage of the club's total revenue	9		12		21	
>0-1.5%		6 (67)		7 (58)		13 (62)
2.5-7.4%		2 (22)		3 (25)		5 (24)
11.5%-46.1%		1 (11)		2 (17)		3 (14)

¹IQR: Interquartile range, presented as the 25th-75th percentile. ²For Ontario, data on the amount of funding received specifically from food-related sponsors was missing for four cases. The amount received from these sponsors is likely very small as the funding received from all sponsors accounted for 3% or less of their total revenue. ³Cases with sponsorship data known to be missing or incomplete were not excluded from the analysis. Relative frequencies may be underestimated. ⁴CAD: Canadian Dollar. Data missing for 7 cases in Ontario and 4 cases in Quebec. This missing data is largely due to human error.

Table 2.5. Percentage of food-related sponsors that provided and received various benefits, overall and by province (n= 118 food sponsors)

	Ontario		Quebec		All clubs	
	N	n (%)	N	n (%)	N	n (%)
Total food sponsors reported	46		72		118	
Benefits received from food sponsors						
Direct funding	44	21 (48)	71	33 (47)	115	54 (47)
Uniforms	43	15 (35)	71	8 (11)	114	23 (20)
Equipment	43	4 (9)	71	5 (7)	114	9 (8)
Sports awards (e.g. medals, trophies)	43	6 (14)	71	7 (10)	114	13 (11)
Free or discounted food	43	10 (23)	71	27 (38)	114	37 (33)
For players	41	8 (20)	71	17 (24)	112	25 (22)
For spectators	41	3 (7)	71	5 (7)	112	8 (7)
For volunteers	43	0 (0)	71	8 (11)	114	8 (7)
For resale	43	0 (0)	71	4 (6)	114	4 (4)
Coupons	43	3 (7)	71	7 (10)	114	10 (9)
Gift cards	43	0 (0)	71	5 (7)	114	5 (4)
Discount for members	43	0 (0)	71	2 (3)	114	2 (2)
Store credit	43	1 (2)	71	1 (1)	114	2 (2)
Gifts for players	43	5 (12)	71	1 (1)	114	6 (5)
Major sponsor	40	15 (38)	71	28 (39)	111	43 (39)
Promotional benefit provided to a food related sponsor						
Name or logo on uniforms	43	27 (63)	71	28 (40)	114	55 (48)
Children aged ≤12 years	37	20 (54)	71	25 (35)	108	45 (42)
Children aged 13-17 years	37	2 (5)	71	19 (27)	108	21 (19)
Name or logo on sports equipment	43	4 (9)	71	5 (7)	114	9 (8)
Children aged ≤12 years	43	4 (9)	71	5 (7)	114	9 (8)
Children aged 13-17 years	43	1 (2)	71	0 (0)	114	1 (9)
Name or logo on sports prizes	43	8 (19)	71	7 (10)	114	15 (13)
Children aged ≤12 years	43	8 (19)	71	7 (1)	114	15 (13)
Children aged 13-17 years	43	1 (2)	71	1 (1)	114	2 (2)
Naming rights for a team/association of the sponsor's name with a team	41	4 (10)	71	2 (3)	112	6 (5)
Children aged ≤12 years	41	4 (10)	71	2 (3)	112	6 (5)
Children aged 13-17 years	41	0 (0)	71	0 (0)	112	0 (0)
Name or logo on signs at sporting events	41	3 (7)	71	39 (55)	112	42 (38)
Name of logo on club websites and/or social media pages	42	34 (81)	71	45 (64)	113	79 (70)
Advertising in a tournament or event program	42	5 (12)	70	10 (14)	112	15 (13)
Use of product ¹	42	9 (21)	71	14 (20)	113	23 (20)
Advertising in an email or newsletter	42	1 (2)	70	5 (7)	112	6 (5)
Public announcement at an event	42	0 (0)	70	6 (9)	112	6 (5)
Earned media	42	2 (5)	70	1 (1)	112	3 (3)
Presence at an event	42	0 (0)	70	2 (3)	112	4 (2)
Other	42	3 (7)	70	1 (1)	112	2 (2)

¹Derived from sponsors who provided free food, excluding grocery stores because the provision of and exposure to products from their house brands was generally unclear.

Table 2.6. The prevalence and content of written policies pertaining to sponsorship among children's sports clubs, overall and by province (n=87 sports clubs)

	Ontario		Quebec		All clubs	
	N	n (%)	N	n (%)	N	n (%)
Written policy on sponsorship	47		39		86	
Yes		21 (45)		15 (38)		36 (42)
Not but planning on having one		2 (4)		7 (18)		9 (11)
No and no plans on having one		24 (51)		17 (44)		41 (48)
Content of written policy						
Rules about the type of companies clubs accept sponsorship from ^{1,2} (n, % yes)	19	8 (42)	15	3 (20)	34	12 (35)
Guidelines outlining levels of support and associated promotional benefits for sponsors ³	20	11 (55)	15	9 (60)	35	20 (57)
Requirement that sponsors be approved by the board ³	20	7 (35)	15	3 (20)	35	10 (29)
Rules about how sponsorship funding is used, managed and/or distributed ³	20	8 (40)	15	1 (7)	35	9 (26)
Rules outlining the responsibilities of the club and/or sponsored teams in relation to their sponsorship agreement ³	20	4 (20)	15	1 (0)	35	4 (11)
Rules about avoiding conflicts between club and team sponsors ³	20	2 (10)	15	1 (7)	35	3 (9)

¹ Result derived from a survey item. ² Companies clubs would not accept sponsorship from include those related to alcohol (n=10), tobacco (n=8), gambling (n=4), cannabis or drugs (n=5), sex (n=2), weapons (n=1) and "junk food" (n=1). ³ Result derived from a content analysis of unprompted comments made about the club's policy and a review of policy documents shared by a subset (n=5) of clubs.

Discussion

Frequency and nature of food company sponsorship and related advertising

Overall, about half of participating clubs in both provinces were sponsored by a food-related company though, consistent with other research, this type of sponsor constituted the minority of all sponsors reported (Kelly et al., 2011b; Martino et al., 2021; Pauzé et al., 2020). Fast food restaurants were the most frequent type of food-related sponsor followed by sit-down restaurants in Ontario and food retailers (particularly grocery stores) in Quebec. The predominance of restaurants, particularly fast-food, among food-related sponsors or potential sponsors of children's sporting activities has also been reported by other Canadian research (Pauzé et al., 2020; Pauzé et al., 2025b). Many of the restaurant sponsors were large chains. This is noteworthy as most menu items available in such restaurants in Canada have been shown to contain high amounts of saturated fats, sodium, and/or sugar which most children consume in excess (Bernstein et al., 2023; Smith et al., 2021; Yang et al., 2023).

Food-related sponsors were advertised by various means, most frequently on club or team websites and/or social media pages, which is probably less likely to reach children. Notwithstanding, at least a quarter of clubs in both provinces displayed the name or logo of one or more food-related sponsor on uniforms, most often on those of children aged 12 years and under. Branded uniforms most often promoted fast-food restaurants. This is concerning as branded uniforms allow for repeated and prolonged exposure to food marketing and have been shown to yield greater effects on awareness than other forms of sponsorship advertising (Corti et al., 1997). Food-related sponsors were also promoted on a more occasional basis, such as on sports awards and via products provided to club members at events. Irrespective of the frequency of exposure, this marketing adds to the high volume of food advertising that many children are exposed to across media and settings, most of which promotes unhealthy food and beverages (Vanderlee et al., 2025).

Monetary value of benefits provided by food-related sponsors

Clubs received various benefits from food-related sponsors, most often direct funding and in-kind benefits such as free food, uniforms, equipment, sports awards (mostly medals) and coupons. Notwithstanding, the value of these contributions was low in most cases. Among the small share of clubs who received funding from food-related sponsors, amounts received represented 6% or

less of clubs' total revenue. In many cases, the perceived total value of in-kind benefits from these sponsors was also small (<1.5%) relative to clubs' total revenue. This suggests that it may be feasible for clubs to seek support from alternative sponsors or sources of funding. Interestingly, most participating clubs in Quebec received direct funding from government sources, primarily municipal governments, and contrary to those in Ontario, many also mentioned they had access to sports facilities at very little to no cost (Pauzé et al. unpublished). Yet, three quarters of sports clubs in Quebec also reported receiving sponsorship. Irrespective of the level of public funding, it is possible that sports clubs are generally concerned with ensuring the accessibility of their sport and as such try to minimize costs for their members by seeking sponsorship. It is also possible that clubs within some sports may be competing for members and that sponsorship may give them some kind of competitive advantage (e.g. by allowing them to offer lower prices or other perks to members). More research is needed to understand what motivates sports clubs to seek out sponsors. Notwithstanding, increased government funding for children's sports in Quebec would likely limit the potential impact of sponsorship restrictions on the finances of sports clubs.

Quebec's Consumer Protection Act

Our findings suggest Quebec's Consumer Protection Act (CPA) is not sufficiently limiting children's exposure to food advertising stemming from sponsorship, including some forms that could be considered prominent and/or appealing to children aged under 13 years, such as the promotion of fast-food restaurants on their uniforms and sports awards and possibly the provision of free food and coupons. This is consistent with a recent Canadian study that found that 23-48% of the 106 surveyed children aged 10-12 years living in Quebec who played or competed on a sports team reported exposure to these forms of food advertising in amateur sports settings (Pauzé et al., 2025b). This result is also not surprising considering that most clubs did not seem to be aware of the CPA's sponsorship-related restrictions. It should be noted that our survey did not specifically ask how the names of food-related sponsors were displayed on uniforms and other promotions. Therefore, it is unclear whether sponsors were promoted using their logos, which seems to be proscribed for sponsors deemed child appealing (Office de la protection du consommateur, 2012). Given that respondents were largely unaware of CPA restrictions, there is little reason to think logos were not used. Observational audits of sporting events or of sports clubs'

social media publications could be conducted to confirm the use of logos in sponsorship-related food advertising in Quebec.

Even if clubs were more aware of sponsorship-related advertising restrictions, available information on these restrictions is limited. According to the law's application guide, companies that make or sell products intended for or appealing to children can sponsor children's activities but cannot be advertised in a way that "arouses children's attention" nor use a mascot or logo (Office de la protection du consommateur, 2012). Beyond providing a few examples, current guidance does not give a detailed or exhaustive list of what constitutes companies or brands deemed child-appealing, nor does it spell out what types of sponsorship-related promotions would be considered directed to children or would captivate their attention (Office de la protection du consommateur, 2012). Notably, compliance with the CPA is not actively monitored by the government but rather depends on complaints made by members of the public. To ensure the implementation of these restrictions, a public awareness campaign among sports clubs, more detailed application guidelines and better compliance monitoring will likely be needed.

Industry's new self-regulatory code

The Canadian food industry's new self-regulatory code, which includes some limits on product advertising in the context of children's sports sponsorship, was not yet in effect during the survey's recall period. This code however does not apply to brand advertising (i.e. promotions with no visible product) and other forms of promotion that were reported by surveyed sports clubs including the display of a sponsor's name or logo on uniforms, equipment or other items given to children aged 12 years and under and the provision of free food, coupons or gift certificates (Association of Canadian Advertisers et al., 2022). As such, this new code is unlikely to have much impact on the frequency of food-related sponsorship and children's exposure to associated food marketing. In fact, research conducted in Canada and other countries has shown repeatedly that industry self-regulation is not effective at protecting children from unhealthy food marketing and these initiatives have been more often associated with detrimental effects for public health than desirable ones (Boyland et al. 2022b; Galbraith-Emami & Lobstein, 2013; Kelly et al., 2019; Landwehr & Hartmann, 2020; Potvin Kent et al., 2018, 2023; Potvin Kent, et al., 2019a; Potvin Kent et al., 2019b; Potvin Kent & Pauzé, 2018; Powell et al., 2024; Watson et al., 2017, 2021). Curbing children's exposure to unhealthy food marketing through sponsorship will likely require

government-led mandatory restrictions, as recommended by the World Health Organization's most recent evidence-informed guidelines (World Health Organization, 2023).

Feasibility and acceptability of restricting food company sponsorship

In Canada, the restriction of food company sponsorship raised concerns regarding potential unintended consequences for the accessibility of children's sports (Health Canada, 2017; Senate of Canada, 2018; Sport Matters Group, n.d.), however, our study found that the amount of funding and the value of in-kind benefits provided by food-related sponsors was often small relative to clubs' total revenue and most reported sponsors were also not food-related. Overall, this suggests that restricting sponsorship promoting food brands deemed unhealthy may have a limited impact on most clubs. Nevertheless, these benefits may be greatly appreciated by sports clubs, many of whom are non-profit organizations and are often run by volunteers. Notably, corporate sponsorship programs, like that of Tim Hortons and McDonald's who provide uniforms and other items, may be particularly valued. The reliability of such programs in providing consistent support year after year was said to be especially appreciated by one respondent (Pauzé et al. unpublished). Some club representatives also mentioned that getting sponsorship was generally difficult and alternative sources of funding like government or other grants were also not easy to obtain and did not help clubs cover their usual operating costs (Pauzé et al. unpublished). As reported by an Australian study, funding challenges were perceived by children's sports club officials as significant barriers to refusing sponsorship from unhealthy food companies (Zorbas et al., 2023). Favorable views of sponsorship may also hinder support for its restriction. Despite constituting a form of marketing, sponsorship may be perceived by some as an act of good will and a genuine form of reciprocal support between members of the local community (Richards & Phillipson, 2017; Zorbas et al., 2023). Furthermore, sponsorship from unhealthy food sponsors may not be currently or widely viewed as problematic as reflected in clubs' current policies (Zorbas et al., 2023). Although some participating clubs had formal or informal policies pertaining to the types of companies they would accept sponsorship from, only a few mentioned these rules applied to food-related sponsors. Research on the views of the sporting community and the acceptability of sponsorship restrictions in Canada is needed to understand and overcome policy barriers.

Strengths and limitations

This is the first study in Canada to examine the benefits that sports clubs derive from food company sponsorship and the first globally to quantify or estimate the amount of funding and the monetary value of in-kind benefits that were specifically received from food-related sponsors (Gonzalez et al., 2020; Kelly et al., 2011b). This research however has many limitations. Non-probability sampling was used, and the response rate was low and variable by province and sport therefore findings are not representative and are subject to selection bias. Obtaining a comprehensive picture of sponsorship also proved challenging. In some cases, seeking sponsorship was centralized at the club-level. In other cases, soliciting sponsors was carried out by both clubs and teams, or just teams. That said, larger sponsors (e.g. sponsorship stemming from corporate programs) were primarily sought at the club level and were likely captured by our survey. At the team-level, sponsors were mostly sought to cover costs related to tournaments and competitions and their monetary value was generally thought to be minimal. Despite sending respondents a list of key information to have on hand for the survey, respondents' level of preparedness varied. In some cases, respondents did not have exact financial information on hand and could only provide estimates. Recall bias was also evident as sponsors reported on their website were sometimes overlooked. Here, probing about sponsors listed on club websites not only helped reduce recall bias but was also instructive in understanding how clubs perceived some sponsors, which they sometimes viewed as “partners”, not sponsors. Unfortunately, our survey did not include a definition of sponsorship, and this term may have been subject to some interpretation. As our survey examined sponsorship from a previous fiscal period, which may have ended several months earlier, the risk of recall bias was likely greater than asking about current sponsors. Sponsors providing in kind-benefits were probably more likely to be overlooked particularly as their contribution would not be recorded in financial statements. Although our study sought to quantify the value of these in-kind benefits, this assessment relied on the perception of respondents and may not be accurate. Also, it should be noted that the survey's recall period coincided with a period that was still affected by the Covid-19 pandemic and related social measures (e.g. cancellation of activities for 4-5 weeks in early 2022). Clubs mentioned that this period was atypical, with some saying they had fewer participants and less sponsorship revenue than usual. Clubs also reported being affected by inflation, with some saying they intended to seek out more sponsorship in the future (Pauzé et al. unpublished). Given all the above, this study should be considered exploratory.

Future surveys should provide a comprehensive definition of sponsorship and be timed, if possible, with the end of most clubs' fiscal year or their sporting season, which may vary by sport, to reduce recall bias and improve the quality of the data.

Conclusion

Findings suggest the sponsorship of children's sports clubs in Ontario and Quebec is frequent and that children are exposed to various forms of food marketing as a result. Though clubs derived benefits from this sponsorship, their total value was small relative to clubs' total revenue in many cases. Notably, Quebec's CPA does not appear to be limiting prominent forms of food advertising (e.g. promotion on uniforms) directed at children under 13 years for brands that likely appeal to them (e.g. fast-food restaurants). The Canadian food industry's new self-regulatory code also does not apply to many forms of sponsorship-related food advertising reported by sports clubs and is thus not likely to be effective. Legislation or regulation at the national level could help curb children's exposure to sponsorship-related food marketing and any potential unintended consequences regarding sports club funding could be avoided through increased government funding or increased sponsorship by other industries that do not hinder child health.

Supplemental Table S2.1. Response rate per sport, city size and province

	Ontario		Quebec		All clubs	
	Sampled n	Response rate	Sampled n	Response rate	Sampled n	Response rate
Sport						
Hockey	93	17.2%	35	14.3%	128	16.4%
Swimming	24	12.5%	20	15.0%	44	13.6%
Basketball	44	13.6%	17	17.6%	61	14.8%
Volleyball	16	12.5%	7	14.3%	23	13.0%
Gymnastics	32	3.1%	21	19.0%	53	9.4%
Figure Skating	30	26.7%	29	20.7%	59	23.7%
Soccer	71	7.0%	34	35.3%	105	16.2%
Baseball	40	15.0%	19	31.6%	59	20.3%
Location						
Large city	308	14.0%	152	22.4%	460	16.7%
Small population center	42	9.5%	30	20.0%	72	13.9%
Total	350	13.4%	182	22.0%	532	16.4%

Supplemental Table S2.2. Recall period for the survey administered to representatives of children's sports clubs, overall and by province (n=87 sports clubs)

	Ontario (N=47)	Quebec (N=40)	All clubs (N=87)
Recalled fiscal year	n (%)	n (%)	n (%)
Year ending in 2021	4 (8.5)	1 (2.5)	5 (5.7)
Year ending in 2022	42 (89.4)	39 (97.5)	81 (93.1)
Year ending in 2023	1 (2.1)	0 (0)	1 (1.1)

Supplemental Table S2.3. Number of sponsored clubs who reported having teams who seek out their own sponsorship and the ability of club representatives to provide information about team sponsors

	Ontario	Quebec	All clubs
Number of sponsored clubs who have teams that seek their own sponsors	19	11	30
Clubs who reported all team sponsors	4 (21)	2 (18)	6 (20)
Clubs who reported information on some team sponsors	5 (26)	1 (9)	6 (20)
Clubs who could not provide any information on team sponsors (if any)	8 (42)	7 (64)	15 (50)
Clubs who did not think any teams had sponsors during the recall period	2 (11)	1 (9)	3 (10)

Supplemental Table S2.4. Amount of direct funding received by sports clubs from all sponsorship, governments, charities, and sporting organizations, overall and by province (n=87 sports clubs)

	Ontario		Quebec		All clubs	
	N		N		N	
Sponsorship						
Receipt of sponsorship, n (%) yes	47	31 (66)	40	30 (75)	87	61 (70)
Receipt of funding from sponsors, n (%) yes	45	25 (56)	39	24 (62)	84	49 (58)
Number of reported sponsors, min-max, median (IQR ¹)	44	0-54 2.5 (0-6)	40	0-53 4 (0-9)	84	0-54 3 (0-8)
Amount of funding, CAD ² , min-max, median (IQR ¹)	43	0 -124,600 800 (0-10,000)	39	0-200,000 2,750 (0-14,500)	82	0-200,000 1,500 (0-12,832)
Amount of funding, n (%)						
0		20 (46.5)		15 (38)		35 (43)
500-8,500		12 (27.9)		12 (31)		24 (29)
10,000-30,000		5 (11.6)		7 (18)		12 (15)
45,450-200,000		6 (14.0)		5 (13)		11 (13)
Share of total club revenue, min-max, median (IQR ¹)	41	0 – 49.8 0.1 (0-2.9)	38	0 – 34.4 1.1 (0-5.7)	79	0-49.8 0.6 (0-3.9)
Share of total revenue, n (%)						
0		20 (49)		15 (40)		35 (44)
>0-5%		16 (39)		13 (34)		29 (37)
>5-15%		3 (7)		8 (21)		11 (14)
>15-50%		2 (5)		2 (5)		4 (5)
Funding from the government						
Receipt, n (%) yes	47	9 (19)	40	30 (75)	87	39 (45)
Amount of funding, CAD ² , min-max, median (IQR ¹)	47	0-579,493 0 (0-0)	40	0-205,000 11,925 (250-55,680)	87	0-579,490 0 (0-27,000)
n (%)						
0		38 (81)		10 (25)		48 (55)
500-14,000		3 (6)		13 (32.5)		16 (18)
22,500 – 75,000		4 (9)		11 (27.5)		15 (17)
114,500 -579,500		2 (4)		6 (15)		8 (9)
Receipt (excluding government programs related to COVID), n (%) yes	47	6 (13)	40	28 (70)	87	34 (39)
Amount of funding (excluding government subsidies or grants related to COVID), CAD ² , min-max, median (IQR ¹)	47	0-75,000 0 (0-0)	40	0-197,400 9,305 (0-34,650)	87	0-197,400 0 (0-12,100)
n (%)						
0		41 (87)		12 (30)		53 (61)
500-14,000		3 (6)		13 (32.5)		16 (18)
17,970-75,000		3 (6)		11 (27.5)		14 (16)
100,000-197,400		0 (0)		4 (10)		4 (5)
Funding from charities						

Receipt, n (%) yes	47	4 (9)	40	4 (10)	87	8 (9)
Amount of funding, CAD ² , min-max, median (IQR ¹)	47	0-104,000 0 (0-0)	40	0-112,000 0 (0-0)	87	0-112,000 0 (0-0)
n (%)						
0		43 (92)		36 (90)		79 (91)
1,000-7,500		1 (2)		3 (7.5)		4 (5)
15,000-112,000		3 (6)		1 (2.5)		4 (5)
Funding from sports organizations						
Receipt, n (%) yes	47	20 (43)	40	15 (38)	87	35 (40)
Amount of funding, CAD ² , min-max, median (IQR ¹)		0-27,650 0 (0-4,000)		0-22,000 0 (0-2,470)		0-27,650 0 (0-2,500)
n (%)						
0		27 (57)		25 (62.5)		52 (60)
216-5,000		13 (28)		8 (20)		21 (24)
5,500-10,000		4 (9)		5 (12.5)		9 (10)
13,500-27,650		3 (6)		2 (5)		5 (6)

¹IQR: Interquartile range, presented as the 25th-75th percentile. ²CAD: Canadian dollar.

Supplemental Table S2.5. The participation of children's sport clubs in fundraising activities and the existence of written policies on fundraising, overall and by province (n=87 sports clubs)

	Ontario		Quebec		All clubs	
	N	n (%)	N	n (%)	N	n (%)
Participation in fundraising	47		39		86	
Yes, the club only		10 (21)		11 (28)		21 (24)
Yes, teams only		13 (28)		11 (28)		24 (28)
Yes, the club and teams		8 (17)		2 (5)		10 (12)
No		16 (34)		15 (39)		31 (36)
Club fundraisers	18		13		21	
Sell food and beverages		9 (50)		7 (46)		18 (58)
Sell other items		3 (17)		1 (8)		4 (13)
Host clinics		4 (22)		1 (8)		5 (16)
Host tournaments or meets		5 (28)		8 (62)		13 (42)
Charging a fundraising fee as part of registration		5 (28)		0 (0)		5 (16)
Sell team merchandise		8 (44)		8 (62)		16 (52)
Organize raffles		7 (39)		3 (23)		10 (32)
Swim-a-thon and similar events		2 (11)		1 (8)		3 (10)
Fundscript/FlipGive		2 (11)		0 (0)		2 (7)
Organize social events		2 (11)		0 (0)		2 (7)
Other (e.g. car wash, recycling drive, bingo)		2 (11)		4 (31)		6 (19)
Written policy on fundraising	44		40		84	
Yes		15 (34)		4 (10)		19 (23)
Not but planning on having one		1 (2.3)		8 (20)		9 (11)
No and no plans on having one		28 (64)		28 (70)		56 (67)
Content of fundraising policy	15		4		18	
Rules about permitted fundraisers (% yes) ¹		6 (40)		1 (5)		7 (37)
Rules about the type of products that can be sold for fundraising (% yes) ¹		2 (14)		0 (0)		2 (11)

¹ Result derived from a survey item.

Supplemental Table S2.6. Percentage of reported sponsors by type of sponsor and percentage of food-related and other sponsors reported as being a “major”¹ sponsor, overall and by province

	Ontario		Quebec		All clubs	
	N	n (%)	N	n (%)	N	n (%)
Type of sponsor	261		264		525	
Food-related		46 (18)		72 (27)		118 (22)
Other		215 (82)		192 (73)		407 (78)
Food-related sponsor reported as “major”	40	15 (38)	71	28 (39)	111	43 (39)
Other sponsors reported as “major”	161	42 (26)	185	70 (38)	346	113 (33)

¹Major sponsors were defined as those providing \$1500 or more of direct funding or in-kind benefits

Supplemental Table S2.7. Characteristics of foods sponsors promoted via select forms of marketing

	Ontario		Quebec		All clubs	
	N	n (%)	N	n (%)	N	n (%)
Type of sponsors advertised on uniforms for children aged 12 and under	20		25		45	
Fast food restaurants		18 (90)		13 (52)		31 (69)
Sit-down restaurants		0 (0)		3 (12)		3 (7)
Food retailers		0 (0)		7 (28)		7 (16)
Agricultural businesses/organizations		0 (0)		1 (4)		1 (2)
Food and beverage manufacturers		7 (10)		1 (4)		3 (7)
Type of sponsors advertised on uniforms for children aged 13-17 years	2		19		21	
Fast food restaurants		1 (50)		6 (32)		7 (33)
Sit-down restaurants		0 (0)		3 (16)		3 (14)
Food retailers		0 (0)		7 (37)		7 (33)
Agricultural businesses/organizations		0 (0)		1 (5)		1 (5)
Food and beverage manufacturers		1 (50)		2 (11)		3 (14)
Type of sponsors advertised on equipment given to children aged 12 and under	3		5		8	
Fast food restaurants		3 (75)		5 (100)		8 (89)
Food and beverage manufacturers		1 (25)		0 (0)		1 (11)
Type of sponsors advertised on sports awards given to children aged 12 and under	8		7		15	
Fast food restaurants		7 (88)		6 (86)		13 (87)
Food and beverage manufacturers		1 (12)		1 (14)		1 (7)

Footnotes:

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Study 3: Examining differences in children’s reported exposure to food advertising in amateur sports settings in Canada’s two policy environments: A cross-sectional study

Preface

Addressing research questions 2 and 3, this cross-sectional observational study examines differences in self-reported exposure to food advertising in amateur sports settings between children living in Ontario and Quebec and among children protected by advertising restrictions in Quebec and those who are not. This study expands on study one by including additional exposure measures that capture more types of sponsorship-related advertising as well as the brands that children recall seeing advertised in this setting. A copy of the ethics certificate (H-09-21-7089) and survey are available in Appendix II and V, respectively.

In terms of my contribution, I helped secure the research funding and conceptualize study, I prepared the ethics application, drafted and revised the survey, coordinated the data collection with the University of Waterloo’s Statistical Consulting and Survey Research Unit, cleaned the data, conducted the data analysis, prepared the tables and drafted and revised the manuscript. My co-authors helped secure the funding (Monique Potvin Kent [MPK], Cathrine Mah [CM] and Monica Taljaard [MT]), conceptualize the study (MPK and CM) and assisted with the data analysis (MT). All authors reviewed the manuscript.

Preliminary findings were shared with the project’s steering committee members in November 2023. They were also presented on May 30th, 2024, during a webinar organized by TRANSNUT at the Université de Montréal. This presentation was entitled “La commandite des clubs sportifs pour les jeunes dans deux contextes réglementaires au Canada: sa portée, sa nature et son impact potentiel sur la santé.”

Manuscript title: Examining differences in children's reported exposure to food advertising in amateur sports settings in Canada's two policy environments: A cross-sectional study

Authors and affiliations:

Elise Pauzé¹, Catherine L. Mah², Monica Taljaard³, Monique Potvin Kent⁴

1. Interdisciplinary School of Health Sciences, University of Ottawa
2. School of Health Administration, Faculty of Health, Dalhousie University
3. Ottawa Hospital Research Institute, Clinical Epidemiology Program
4. School of Epidemiology and Public Health, University of Ottawa

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Research Snapshot

Research Question: How does children's self-reported exposure to food advertising in amateur sports settings differ between the province of Quebec, where sponsorship-related advertising directed to children under 13 years is regulated, and the province of Ontario, where there are no regulations?

Key Findings: In this cross-sectional online survey that included 439 children aged 10-17 years, no statistically significant differences in reported exposure to food advertising by way of signs, branded prizes, branded sports equipment, free food and coupons or gift certificates were observed between children aged 10-12 years protected by Quebec's advertising restrictions and those not protected in Quebec and Ontario.

Abstract

Background: Food marketing influences children's diet. Although food companies advertise to children via sports sponsorship, little research has examined this type of advertising.

Objective: Describe and compare children's self-reported exposure to food advertising in amateur sports settings in two Canadian policy environments including Quebec (QC; where sponsorship-related advertising directed to children under 13 years is regulated) and Ontario (ON; where there are no regulations). It was hypothesized a priori that reported exposure to food advertising would be lower among children under 13 years in Quebec.

Design: Cross-sectional online survey.

Participants/Setting: 1020 children aged 10-17 years living in Ontario and Quebec were recruited via a commercial panel in February-April 2023. Those who reported playing on sports team outside of school (ON=239; QC=200) were included in the analysis.

Main outcome measures: Children were asked to self-report exposure to food advertising when playing sports including i) signs, ii) branded sports equipment provided by their sports team iii) branded awards iv) free food and v) coupons or gift certificates.

Analysis: Logistic regression analysis was used to examine differences in reported exposure between provinces after adjusting for socio-economic status and child age, sex and race. Interaction terms were included to examine differences between age groups within and between provinces.

Results: The prevalence of reported exposure was highest for branded equipment (ON:57%; QC:44%) and signs (ON:47%; QC:43%), followed by branded prizes (ON:30%; QC:28%), free food (ON:25%; QC:27%) and coupons or gift certificates (ON:26%; QC:20%). The odds of reporting exposure to branded equipment were significantly lower among children in Quebec than those in Ontario (AOR: 0.68 95% CI: 0.46, 0.99, $p=.049$). No other differences in reported exposure, including differences between children aged 10-12 years in Quebec and other children, were found to be statistically significant for the above outcomes.

Conclusions: Findings suggest Quebec's advertising restrictions are not adequately protecting children from exposure to food advertising in amateur sports settings.

Background

Poor diet and obesity among children remain considerable population health issues in economically developed countries, including Canada¹⁻³. Most children in Canada do not eat enough fruit and vegetables and on average consume high or excessive amounts of ultra-processed foods, sugary beverages and nutrients of public health concern like sodium and free sugars.⁴⁻⁸ While factors shaping dietary patterns are numerous and complex⁹, exposure to food marketing is considered a particularly influential determinant of poor dietary preferences and energy intake among children, particularly as most of this marketing promotes highly caloric food of low nutritional value (e.g. fast food, sugary beverages, confectionery, chips).¹⁰⁻¹⁴

Amateur sports settings have been increasingly identified as a source of exposure to food advertising among children, particularly in community settings.¹⁵⁻²³ An environmental assessment of 51 sports and recreational facilities in Canada identified food marketing in nearly all (98%) facilities and most instances of marketing promoted products or brands deemed “less” or “least healthy”.¹⁶ The sponsorship of amateur sports is also exposing children to various forms of food advertising including branded signs, prizes and jerseys, product vouchers and free food.¹⁷⁻²⁰ In Canada, an online survey conducted among a national sample of children aged 10 to 17 years found that 36% and 22% of the 1450 respondents who played on a sports team in 2019 reported seeing the name or logo of a food or restaurant company on signs at their sporting events and on their sports equipment, respectively.²¹ While this survey did not ask children to report the companies they were exposed to, a study auditing the websites of 67 sports clubs located in Ottawa, Ontario (Canada’s national capital) for the five most popular sports among children found that large fast food and sit down restaurant chains, whose menus largely consist of foods high in calories, sugar, sodium and/or saturated fats²⁴, accounted for about half of identified food-related sponsors.²² Similarly, research conducted in Australia^{17-20,23} and anecdotal evidence from the United Kingdom²⁵ and the United States^{26,27} reveal that brands associated with less healthy foods (e.g. fast food, sugary beverages) are being promoted to children via the sponsorship of their sporting activities. This is concerning as, consistent with the broader evidence on food marketing¹⁴, exposure to sponsorship has been associated with greater brand awareness, more favorable brand attitudes and higher purchase intentions, which are considered antecedents of purchasing and consumption.^{28,29}

Recognizing the pervasiveness of unhealthy food marketing and its harmful effects on children, the World Health Organization adopted a resolution in 2010 calling on member countries to restrict unhealthy food marketing to children³⁰. Much like in the United States³¹, Australia³² and several European countries³³, food advertising in most of Canada³⁴ remains largely self-regulated by the food industry despite the demonstrated ineffectiveness of this approach³⁵. Canada's newest self-regulatory code, in effect since June 2023, does not explicitly state whether it applies to recreational sports facilities.³⁴ However, unlike the preceding code (2007-2020), industry's new code does ostensibly limit some product advertising stemming from the sponsorship of children's sports however this commitment is very limited in scope and does not apply to brand advertising and other forms of promotion like the provision of free food or vouchers^{34,36,37}. In the Canadian province of Quebec, however, the policy environment is distinct, providing a unique opportunity for an empirical comparison. Since the 1980's commercial advertising directed to children under 13 years has been restricted by Quebec's Consumer Protection Act³⁸. In media and settings where children can be reached, this law essentially restricts the advertising of products intended specifically for children (e.g. toys, candy, children's restaurant menu items) as well as advertising designed to explicitly target or appeal to children by depicting child or imaginary characters or using child language, fantastical media techniques, and themes such as adventure and magic³⁸. These restrictions apply to various media (e.g. television, digital media) as well as settings that children frequent such as recreational environments³⁸. Quebec is also one of the few jurisdictions globally to have government restrictions on advertising stemming from the sponsorship of children's activities, including sports^{33,39}. According to the law's application guide, companies sponsoring a children's activity "whose products are primarily intended for children or appeal to them cannot ... present the message in a childlike way or in a manner that would arouse the interest of children [or] use a logo or mascot"³⁸. Notwithstanding, these types of sponsors can be advertised by "discreetly" mentioning "a name that does not draw children's attention"³⁸. For example, a company selling candy can sponsor an activity for children and be advertised soberly at the event using a sign stating "This event is sponsored by [name of company]" but this sign would be prohibited if it was very prominent or featured the company's logo or mascot³⁸. In addition to candy, certain desserts and fast foods are cited as examples of products that are likely to appeal to children³⁸.

To date, no study has specifically examined children's exposure to food advertising in amateur sports settings in Quebec nor assessed if and how this exposure may differ between children protected by Quebec's law and those not protected both within and outside the province^{40, 41}. As such, the objectives of this study were to 1) describe and characterize children's reported exposure to various types of food advertising in amateur sports settings, including the companies or brands they recall seeing promoted, in Canada's two policy environments and 2) examine potential differences in reported exposure by policy environment and age group. It was hypothesized a priori that children under 13 years in Quebec protected by the province's sponsorship-related advertising restrictions would be less likely to report exposure to food advertising in amateur sports settings compared to older children in Quebec and those under 13 years and older children living outside Quebec. It was also hypothesized that children under 13 years in Quebec would be less likely to report exposure to advertising for food companies or brands associated with products that are likely appealing to children (e.g. fast-food restaurants) compared to other children. Overall, this research may shed light on the effectiveness of Quebec's law in protecting children from exposure to unhealthy food advertising.

Methods: An online cross-sectional survey was conducted from February 13th to April 21st, 2023, among children aged 10 to 17 years living in the adjacent provinces of Quebec and Ontario. Ontario was selected as the comparator province to Quebec because it is the most populous province in Canada, followed by Quebec. The survey was administered by the University of Waterloo's Statistical Consulting and Survey Research Unit and participants were recruited from a consumer panel belonging to a Quebec-based polling firm called Léger and its partner panels. For each province, sampling quotas were used to ensure equal representation of children by age (10-12 years/13-17 years) and sex at birth (male/female) and ensure a minimum representation of racialized minority groups ($\geq 15\%$ of provincial sample) and children from households of lower socio-economic status ($\geq 20\%$ of provincial sample had a parent with a high school diploma, vocational training or less). The data collection proceeded as follows. An email invitation was sent to Léger's panel members. Those who identified as parents living in Ontario or Quebec were asked whether they had a child aged 10 to 17 years willing to participate in a survey on the sponsorship of sports by food companies. After parental consent was obtained, parents responded to questions on the socio-demographic characteristics of their household (e.g. ability to make ends meet) and of their participating child (i.e. age, sex and race) and were then asked to hand over the survey to

their child. Children were instructed to read an age-appropriate consent form and asked whether they agree, yes or no, to participate in the survey. If the child agreed, they completed the survey which included questions on their participation in sports and on their exposure to food advertising in sports settings. The survey took an average of 7 minutes to complete. The survey could be completed in English or French. The research protocol was assessed and approved by the University of Ottawa's research ethics board (H-09-21-7089).

A total of 43,936 panel firm members were contacted by email. Of those who accessed the survey (n=5,535), 27% were eligible to participate. Of those eligible (n=1,494), 390 explicitly refused to participate, and 84 dropped out or did not complete the survey (Supplemental Figure 3.1). The cooperation rate, defined as the percentage of reached eligible respondents who completed the survey, was 68.3%. The response rate, based on the total number of eligible respondents including those that were potentially eligible but did not access the survey, was 8.6% (Supplemental Figure 3.2). The final survey sample size was 1020 children. The 439 children who reported playing on a sports team, including 200 in Quebec and 239 in Ontario, constitute the analytic sample for the current analysis. Sampling quotas used for the total sample were largely consistent in this subsample however children aged 10-12 years living Quebec were disproportionately male (62%) rather than being roughly equally distributed by sex (Supplemental Figure 3.3).

Sports participation: Child participants were asked whether they had played or competed on a sports team outside of school in the last 12 months and if so, to report the sports they played by selecting one or more responses from a list of 21 sports and/or providing additional responses using an open text box. The survey focused on sports participation outside of school because this environment is known to be a source of exposure to sponsorship-related food advertising^{42,43} and recreational environments are typically subject to different provincial policies or guidelines than schools, particularly outside Quebec^{16,40}. A definition of "sports teams" was provided and encompassed participation in individual sports at the competitive-level and team sports.

Dispositions^a	Description	# of Records
1.0 Interview		1,020
1.1	Completed surveys	1,020
2.0 Eligible, “Non-Interview”		474
2.11	Explicit refusal (parent or child did not consent)	390
2.12	Drop outs or partially completed surveys with insufficient information after eligibility confirmed	84
3.0 Unknown Eligibility		38,401
3.1	Did not log on to survey	37,798
3.21	Drop outs before eligibility confirmed	501
3.3	Invitation returned undelivered	102
4.0 Non-Eligible		4,041
4.10	Respondents screened out of sample	3,065
4.80	Quota filled	952
4.90	Other (speeder/questionable data)	7
4.61	Other (duplicate record)	17
Total		43,936
^a The figure was provided by the University of Waterloo’s Statistical Consulting and Survey Research Unit. The classifications of the final dispositions are based on the American Association of Public Opinion Research’s (AAPOR) standard definitions.		

Supplemental Figure 3.1. Final disposition codes given to each record processed in the context of an online survey completed by children aged 10-17 years living in Ontario and Quebec that was administered from February 13th to April 21st, 2023, by the University of Waterloo’s Statistical Consulting and Survey Research Unit

Outcome rates ^a
The proportion of not eligible (ne): Eligible respondents are children aged 10 to 17 years who reside in Ontario or Quebec. Parental/guardian consent is required. It cannot be assumed that all panel members who were invited to the survey were eligible to complete the survey. For the large proportion of panel members who were sent an invitation and who did not log on to the survey, eligibility is unknown. However, we can estimate the proportion of the unknown cases who would not be eligible by utilizing the proportion of not eligible respondents. $\frac{ne(4.0)}{1.0 + 2.0 + ne(4.0)} = \frac{4,041}{1,020 + 474 + 4,041} = \frac{4,041}{5,535} = 73.0\%$ 73.0% of contacts were not eligible to complete this survey at the time of the online invitation. Therefore, 27.0% of unknown eligibility (disposition 3.0) may have been eligible (e). Of the 38,401 records classified as ‘unknown eligibility’, 10,368 may have been eligible households. These 10,368 records are included in calculating response rates for the survey.
Contact Rate (AAPOR CON2) This measurement considers how successful the panel firm was at reaching each panel member and includes the proportion of unknown eligibility (3.0) who may be eligible. Overall, the contact rate for the survey is 12.6%. $\frac{1.0 + 2.0}{1.0 + 2.0 + e3.0} = \frac{1,020 + 474}{1,020 + 474 + 10,368} = \frac{1,494}{11,862} = 12.6\%$
Cooperation Rate (AAPOR COOP3) This measurement considers how likely it was that the eligible person reached would attempt to complete the survey. The cooperation rate for the survey is 68.3%. $\frac{1.0}{1.0 + 2.0} = \frac{1,020}{1,020 + 474} = \frac{1,020}{1,494} = 68.3\%$
Response Rate (AAPOR RR3) This measurement considers the number of eligible people who completed the survey. It includes the proportion of unknown eligibility (3.0) who may be eligible. The overall response rate for the survey was 8.6%. $\frac{1.0}{1.0 + 2.0 + e3.0} = \frac{1,020}{1,020 + 474 + 10,368} = \frac{1,020}{11,862} = 8.6\%$
^aThe outcomes rates above were described and calculated by the University of Waterloo’s Statistical Consulting and Survey Research Unit.

Supplemental Figure 3.2. Outcome rates per the American Association of Public Opinion Research (AAPOR) standard definitions for the online survey administered to children aged 10-17 years living in Ontario and Quebec from February 13th to April 21st, 2023

Variables used for sampling quotas ^a	Quebec			Ontario		
	10-12 yrs (n=106)	13-17 yrs (n=94)	Total (n=200)	10-12 yrs (n=123)	13-17 yrs (n=116)	Total (n=239)
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Child sex						
Male	65 (62.3)	45 (47.9)	-	66 (53.7)	59 (50.9)	-
Female	41 (38.7)	49 (52.1)	-	57 (46.3)	57 (49.1)	-
Child race^b						
Racial minority groups	-	-	62 (31.6)	-	-	76 (32.2)
Level of education of the consenting parent						
High school diploma, vocational training or less	-	-	55 (27.5)	-	-	92 (38.5)
^a For the total sample (n=1020), sampling quotas were used to ensure equal representation of children in each province by age (10-12 years /13-17 years) and sex at birth (male/female) and ensure a minimum representation of racialized minority groups ($\geq 15\%$ of provincial sample) and children from households of lower socio-economic position ($\geq 20\%$ of provincial sample had a parent with a high school diploma, vocational training or less).						
^b Data are missing for 7 cases.						

Supplemental Figure 3.3 Distribution of children aged 10-17 years in two Canadian provinces who reported playing on a sports team outside of school in the last 12 months by socio-demographic characteristic used for sampling quotas (n=439)

Reported exposure to various types of food advertising: Children who reported playing on a sports team were asked to report whether they had been exposed to five different types of advertising to understand the nature of children's exposure in sports settings and to help elucidate if and how advertising restrictions in Quebec are applied and/or interpreted and identify potential gaps. Using a matrix-format question, children were asked whether they had seen “the names or logos of restaurant, food or beverage companies in the following places” including i) “on prizes (like trophies, medals, and certificates)” ii) “on uniforms, equipment, or other items (like water bottles)” provided by their sports team (hereafter referred to as “sports equipment”) and iii) “on signs at games, tournaments, competitions or practices”. Children who reported exposure to at least one type of advertising were subsequently asked what restaurant, food or beverage company logo or name they saw on signs, prizes and/or sports equipment and could provide up to five responses using open-text boxes or select “don't know”. Using individual survey items, participants were also asked whether they and their sports teams had iv) received “free food or drinks from a restaurant, food, or beverage company before, during or after a training, practice, game, or competition” and whether they had v) received “a coupon or gift certificate for a restaurant, food or beverage company” from their sports team in the last 12 months. Participants who reported

receiving free food, coupons and/or gift certificates were also asked to provide the names of the companies involved. For each of the five types of food advertising, respondents could answer “yes”, “no” or “don’t know”. Those who selected “yes” were considered exposed while those who selected “no” and “don’t know” were considered not exposed. In some instances, however, responses to the closed and open-ended questions provided conflicting information. When asked to provide the names of food companies to which they were exposed, some respondents exclusively provided responses unrelated to food (e.g. Desjardins, a Canadian bank) while others provided conflicting (e.g. “none”, “n/a”) or nonsensical responses. In these cases, a conservative approach was taken, and it was assumed that participants were not exposed to food advertising and their related responses were changed from exposed to not exposed (n=21 cases involving reported exposure to branded prizes, branded uniforms and signs and n=12 cases involving the receipt of free food, coupons and/or gift certificates). If respondents reported exposure to food advertising but selected “don’t know” when asked to provide the name of the promoted food company, their responses were considered valid, and respondents were considered exposed. Some survey items measuring self-reported exposure were taken or adapted from previous research⁴⁴.

Reported exposure to food companies or brands: The food companies children reported being exposed to on i) signs, prizes and/or sports equipment and ii) via the receipt of free food, coupons, and/or gift certificates when playing sports could largely be described as brands and are hereafter described as such. Responses were grouped into categories including fast food restaurants (restaurants where food is ordered at a counter), sit-down restaurants, beverage brands (excluding those for milk and water), grocery stores, fruit farms, meat and dairy industry associations, dairy brands, packaged food brands and other. Beverage brands were further classified into subcategories including sport drinks, energy drinks, pop/soda and fruit drinks/juice. Fast food restaurants were also further classified into subcategories based on the predominant type of food served including burgers, coffee, pizza, sandwiches, fried chicken, desserts, and other. Participants were classified as exposed or not exposed to reported brands and to the categories and subcategories of brands described above.

Socio-demographic characteristics: Parents were asked to provide information about the age, sex (either male or female) and racial identity of their child as well as their perceived income adequacy and the size of the city or community in which they and their child resided. Child age was grouped

into two categories to allow comparisons between children who were protected by the Consumer Protection Act in Quebec (10-12 years) and those who were not (13-17 years). For race/ethnicity, parents could select one or more of the following responses: “White”, “East/Southeast Asian”, “South Asian”, “Black”, “Indigenous”, “Latino”, “Middle Eastern” and “Other”. Parents’ perceived income adequacy was used as an indicator of children’s socio-economic status and was assessed using the following question: “Thinking about your total monthly income, how difficult or easy is it for you to make ends meet?”. Responses included “very difficult”, “difficult”, “neither difficult nor easy”, “easy” and “very easy”⁴⁴. As for city or community size, responses generally corresponded with Statistics Canada’s classification and included “large urban centre ($\geq 100,000$ inhabitants)”, “medium urban area (30,000-99,999)”, “small urban area (1,000 to 29,999)” and “rural village/area ($<1,000$)”⁴⁵. Some survey items were drawn from previous research⁴⁴.

Data analysis: Sample characteristics were described by policy environment (Ontario/Quebec), using absolute and relative frequencies and medians and interquartile ranges (IQR). Differences in sample characteristics between policy environments (i.e. potential confounders) were explored using standardized differences in proportions⁴⁶. The prevalence of children’s reported exposure to various types of food advertising and the brands they reported seeing promoted were similarly described by age group (10-12 years/13-17 years) and policy environment. To assess potential differences in reported exposure between children aged 10-12 years protected by Quebec’s Consumer Protection Act and other children living in Quebec and Ontario, we conducted multiple logistic regression analyses. These analyses were conducted for each type of food advertising exposure as well as reported exposure to fast food advertising on signs, prizes and/or sports equipment. The latter outcome was examined because Quebec’s Consumer Protection Act could be expected to influence the types of brands children recall being exposed to particularly as its sponsorship-related advertising restrictions apply to companies that make products intended for or appealing to children under 13 years. Differences in exposure to advertising for other types of brands (e.g. beverage brands, grocery stores) on signs, prizes and/or sports equipment or via the receipt of free food, coupons and/or gift certificates could not be tested due to low frequencies. Regression models included age group and policy environment as independent variables and were adjusted for sex (male/female), ability to make ends meet (very difficult and difficult/ very easy, easy, and neither difficult nor easy), and race (White exclusively/Racial minority group). In separate models, an interaction term (age*policy environment) was included, and least square

mean differences were systematically obtained from these models to examine differences between children aged 10-12 years in Quebec and other children. P-values of <0.05 were considered statistically significant. Odd ratios (OR), adjusted odds ratios (AOR) and their respective 95% confidence intervals (CI) were presented for each model. Analyses were performed using SAS 9.4.⁴⁷ Cases with missing values for race (n=7) or ability to make ends meet (n=1) were excluded from regression analyses but were otherwise kept in the sample for other analyses.

Results

Socio-demographic characteristics: As shown in Table 3.1, children aged 10-12 years and males accounted for just over half of respondents in both Quebec and Ontario and two thirds identified as white. In Quebec, 38% of children resided in a large urban city and 29% were from a household where making ends meet was reported as difficult or very difficult. In comparison, 59% of children in Ontario resided in a large urban city and 42% were from a household where making ends meet was reported as either difficult or very difficult. In Quebec, 71% of children reported playing one sport in the last 12 months compared to 59% in Ontario. In both provinces, the most reported sports played were soccer, hockey, basketball, swimming, volleyball and baseball.

Table 3.1 Characteristics of children aged 10-17 years in two Canadian provinces who reported competing on a sports team outside of school in the last 12 months by policy environment (n=439)

	Quebec ^a (n=200)	Ontario ^b (n=239)	Standardized differences in proportions ^c
Age, n (%)			
10-12 years	106 (53.0)	123 (51.5)	.030
13-17 years	94 (47.0)	116 (48.5)	
Sex, n (%)			
Male	110 (55.0)	125 (52.3)	.054
Female	90 (45.0)	114 (47.7)	
Race^d, n (%)			
White	134 (68.4)	160 (67.8)	.013
Racial minority groups	62 (31.6)	76 (32.2)	
East or Southeast Asian	12 (6.1)	12 (5.1)	.044
South Asian	2 (1.0)	19 (8.1)	-.346
Black	13 (6.6)	8 (3.4)	.147
Indigenous	6 (3.1)	4 (1.7)	.092
Latino	6 (3.1)	4 (1.7)	.092
Middle Eastern	13 (6.6)	3 (1.3)	.275
Mixed	10 (5.1)	26 (11.0)	-.218

Parent's ability to make ends meet^e, n (%)			
Very difficult / Difficult	57 (28.5)	99 (41.6)	-.277
Neither easy nor difficult	72 (36.0)	76 (31.9)	.087
Very easy / Easy	71 (35.5)	63 (26.5)	.196
Size of the city or community of residence, n (%)			
Large urban center ($\geq 100,000$ inhabitants)	76 (38.0)	141 (59.0)	-.430
Medium urban area (30,000-99,999 inhabitants)	73 (36.5)	54 (22.6)	.308
Small urban area (1,000-29,999 inhabitants)	46 (23.0)	25 (10.4)	.343
Rural village ($< 1,000$ inhabitants)	5 (2.5)	19 (8.0)	-.248
Sport played in the last 12 months, n (%)			
Soccer	64 (32.0)	95 (39.8)	-.163
Hockey	40 (20.0)	68 (28.5)	-.199
Basketball	31 (15.5)	43 (18.0)	-.067
Swimming	20 (10.0)	39 (16.3)	-.187
Volleyball	26 (13.0)	27 (11.3)	.052
Baseball	18 (9.0)	30 (12.6)	-.116
Dancing	13 (6.5)	17 (7.1)	-.024
Football	13 (6.5)	12 (5.0)	.064
Martial Arts	11 (5.5)	14 (5.9)	-.017
Gymnastic	11 (5.5)	13 (5.4)	-.004
Tennis	10 (5.0)	11 (4.6)	.019
Cycling	5 (2.5)	8 (3.4)	-.053
Softball	3 (1.5)	9 (3.8)	-.144
Snowboard	6 (3.0)	5 (2.1)	.057
Curling	3 (1.5)	7 (2.9)	-.096
Figure Skating	7 (3.5)	3 (1.3)	.144
Other	26 (13.0)	21 (8.8)	.135
Number of sports played			
Minimum – Maximum	1-8	1-13	-
1 sport, n (%)	142 (71.0)	140 (58.6)	.262
2 sports, n (%)	33 (16.5)	59 (24.7)	-.204
3 sports, n (%)	13 (6.5)	22 (9.2)	-.101
4 sports or more, n (%)	12 (6.0)	18 (7.5)	-.060

^aThe province of Quebec restricts commercial advertising directed to children under 13 years.

Sponsorship is permitted. However, sponsors that make products intended for children or appealing to them can only be advertised discreetly and cannot use mascots or logos.

^bThe province of Ontario does not restrict any food advertising directed to children.

^cValues of $\geq .200$ were considered indicative of a potential confounder.

^dData are missing for 7 cases.

^eData are missing for 1 case.

Reported exposure to five types of food advertising in amateur sports settings: In Quebec, children of both age groups reported exposure to a median of one type of advertising (IRQ=3; Supplemental Table 3.2). Among children aged 10-12 years, the prevalence of reported exposure was highest for branded sports equipment (48%) followed by signs (45%) and free food (31%; Table 3.3). Among children aged 13-17 years, the prevalence of reported exposure was highest for signs (49%), followed by branded sports equipment (39%) and branded prizes (27%).

In Ontario, children of both age groups reported a median of two types of advertising (IQR=3). Among children aged 10-12 years, the prevalence of reported exposure was highest for branded sports equipment (52%) followed by signs (44%) and branded prizes (33%). Among children aged 13-17 years, the prevalence of reported exposure was highest for branded sports equipment (55%), followed by signs (41%) and free food (27%).

Differences in reported exposure to most types of food advertising by province and age group were not found to be statistically significant, except for branded sports equipment (Table 3.4). The odds of reporting exposure to branded sports equipment were 0.68 times lower among children in Quebec compared to those in Ontario (AOR 95% CI: 0.46-0.99, $p=.049$) however the difference in odds between age groups was not found to be statistically significant. As shown in Table 3.5, no differences in reported exposure to examined types of food advertising between children aged 10-12 years in Quebec and other children not protected by Quebec's advertising restrictions were found to be statistically significant.

Reported exposure to brands on signs, prizes and/or sports equipment: The most reported type of brand seen promoted by both age groups in Quebec and Ontario were fast food restaurants (particularly coffee shops and burger restaurants) and beverage brands (particularly sports drinks and soda; Table 3.6 & Supplemental Table 3.7). The prevalence of reported exposure to fast food advertising on signs, prizes and/or sports equipment was 54% among children aged 10-12 years in Ontario compared to 42 and 35% among children aged 10-12 and 13-17 years in Quebec, respectively, and 41% among children aged 13-17 years in Ontario.

Supplemental Table 3.2 The number of different types of food advertising^a that children aged 10-17 years in two Canadian provinces reported being exposed to when playing on a sports team outside of school in the last 12 months by policy environment and age group (n=439)

	Quebec ^b			Ontario ^c		
	10-12 yrs (n=106)	13-17 yrs (n=94)	Total (n=200)	10-12 yrs (n=123)	13-17 yrs (n=116)	Total (n=239)
Median (IQR) ^d	1 (3)	1 (3)	1 (3)	2 (3)	2 (3)	2 (3)
Not exposed, n (%)	29 (27.4)	32 (34.0)	61 (30.5)	42 (34.2)	40 (34.5)	82 (34.3)
One type, n (%)	25 (23.6)	17 (18.1)	42 (21.0)	17 (13.8)	17 (14.7)	34 (14.2)
Two types, n (%)	15 (14.2)	21 (22.3)	36 (18.0)	23 (18.7)	20 (17.2)	43 (18.0)
Three types, n (%)	21 (19.8)	15 (16.0)	36 (18.0)	14 (11.4)	20 (17.2)	34 (14.2)
Four types, n (%)	11 (10.4)	5 (5.3)	16 (8.0)	17 (13.8)	13 (11.2)	30 (12.6)
Five types, n (%)	5 (4.7)	4 (4.3)	9 (4.5)	10 (8.1)	6 (5.2)	16 (6.7)

^aThe five types of food advertising included i) signs ii) branded uniform, equipment or other item provided by their sports team, iii) branded prizes, iv) receipt of free food and iv) receipt of a gift certificate or coupon.

^bThe province of Quebec restricts all commercial advertising directed to children under 13 years. Sponsorship is permitted. However, sponsors that make products intended for children or appealing to them can only be advertised discreetly and cannot use mascots or logos.

^cThe province of Ontario does not restrict any food advertising directed to children.

^dIQR: Interquartile range

Table 3.3 Prevalence of reported exposure to food advertising among children aged 10-17 years in two Canadian provinces who played on a sports team outside of school in the last 12 months, by age group and policy environment (n= 439)

	Quebec ^a			Ontario ^b		
	10-12 yrs (n=106)	13-17 yrs (n=94)	Total (n=200)	10-12 yrs (n=123)	13-17 yrs (n=116)	Total (n=239)
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Signs	48 (45.3)	46 (48.9)	94 (47.0)	54 (43.9)	48 (41.4)	102 (42.7)
Branded uniform, equipment or other items provided by their team	51 (48.1)	37 (39.4)	88 (44.0)	64 (52.0)	64 (55.2)	128 (53.6)
Branded prizes	31 (29.3)	25 (26.6)	56 (28.0)	41 (33.3)	30 (25.9)	71 (29.7)
Receipt of coupons or gift certificates	24 (22.6)	16 (17.0)	40 (20.0)	35 (28.5)	26 (22.4)	61 (25.5)
Receipt of free food	33 (31.1)	20 (21.3)	53 (26.5)	29 (23.6)	31 (26.7)	60 (25.1)

^aThe province of Quebec restricts all commercial advertising directed to children under 13 years. Sponsorship is permitted. However, sponsors that make products intended for children or appealing to them can only be advertised discreetly and cannot use mascots or logos.

^bThe province of Ontario does not restrict any food advertising directed to children.

Table 3.4 Unadjusted and adjusted^a logistic regression analyses examining differences in reported exposure to food advertising between age groups and policy environments^b among children aged 10-17 years in two Canadian provinces who reported playing on a sports team outside of school in the last 12 months

	Reported exposure to signs (n=431)			Reported exposure to branded uniforms, equipment or other items provided by their team (n=431)			Reported exposure to branded prizes (n=431)		
	OR ^c (95% CI) ^c	AOR ^d (95% CI) ^c	p- value	OR ^c (95% CI) ^c	AOR ^d (95% CI) ^c	p- value	OR ^c (95% CI) ^c	AOR ^d (95% CI) ^c	p- value
Province									
Quebec	1.17 (0.80; 1.71)	1.19 (0.81; 1.75)	.386	0.67 (0.46; 0.99)	0.68 (0.46; 0.99)	.049	0.90 (0.59; 1.36)	0.88 (0.57; 1.34)	.544
Ontario	[ref] ^f	[ref] ^f		[ref] ^f	[ref] ^f		[ref] ^f	[ref] ^f	
Age									
10-12 years	1.01 (0.69; 1.48)	1.01 (0.69; 1.48)	.951	1.09 (0.75; 1.59)	1.10 (0.75; 1.61)	.641	1.33 (0.87; 2.03)	1.39 (0.91; 2.12)	.131
13-17 years	[ref] ^f	[ref] ^f		[ref] ^f	[ref] ^f		[ref] ^f	[ref] ^f	
	Reported receipt of coupons/gift certificates (n=431)			Reported receipt of free food (n=431)			Reported exposure to fast food restaurant advertising on signs, uniforms, equipment, prizes or other items ^c (n=431)		
	OR ^c (95% CI) ^c	AOR ^d (95% CI) ^c	p- value	OR ^c (95% CI) ^c	AOR ^d (95% CI) ^c	p- value	OR ^c (95% CI) ^c	AOR ^d (95% CI) ^c	p- value
Province									
Quebec	0.71 (0.45; 1.12)	0.69 (0.43; 1.09)	.114	1.08 (0.70; 1.66)	1.10 (0.71; 1.71)	.660	0.69 (0.47; 1.02)	0.70 (0.47; 1.03)	.072
Ontario	[ref] ^f	[ref] ^f		[ref] ^f	[ref] ^f		[ref] ^f	[ref] ^f	
Age									
10-12 years	1.43 (0.91; 2.25)	1.50 (0.95; 2.37)	.084	1.16 (0.75; 1.79)	1.19 (0.77; 1.84)	.437	1.52 (1.03; 2.23)	1.52 (1.03; 2.24)	.035
13-17 years	[ref] ^f	[ref] ^f		[ref] ^f	[ref] ^f		[ref] ^f	[ref] ^f	

^aModels are adjusted for child sex (male/female) and race (White/Racial minority groups), and parent's ability to make ends meet (Very difficult and difficult/Neither difficult nor easy, easy and very easy). ^bThe province of Quebec restricts all commercial advertising directed to children under 13 years. Sponsorship is permitted. However, sponsors that make products intended for children or appealing to them can only be advertised discreetly and cannot use mascots or logos. The province of Ontario does not restrict any food advertising directed to children. ^cOR: Odds Ratios.

^dAOR: Adjusted Odds Ratios. ^eCI: Confidence interval. ^fref: Reference category

Table 3.5 Multiple logistic regression analyses^a examining differences in reported exposure to food advertising in amateur sports settings between age groups within and between policy environments^b among children aged 10-17 years in two Canadian provinces who reported playing on a sports team outside of school in the last 12 months

	Reported exposure to signs (n=431)^c		Reported exposure to branded uniforms, equipment or other items (n=431)^f		Reported exposure to branded prizes (n=431)^g	
	AOR^c (95% CI^d)	p-value	AOR^c (95% CI^d)	p-value	AOR^c (95% CI^d)	p-value
Children aged 10-12 years in Quebec versus those aged 10-12 years in Ontario	1.08 (0.63; 1.83)	.784	0.87 (0.51; 1.48)	.609	0.85 (0.48; 1.50)	.572
Children aged 10-12 years in Quebec versus those aged 13-17 years in Quebec	0.91 (0.52; 1.60)	.734	1.47 (0.83; 2.61)	.190	1.33 (0.70; 2.52)	.378
Children aged 10-12 years in Quebec versus those aged 13-17 years in Ontario	1.20 (0.70; 2.05)	.516	0.75 (0.44; 1.29)	.298	1.22 (0.67; 2.21)	.523
Children aged 10-12 years in Ontario versus those aged 13-17 years in Ontario	1.11 (0.66; 1.87)	.693	0.86 (0.51; 1.45)	.576	1.43 (0.81; 2.53)	.215
	Reported receipt of coupons/gift certificates (n=431)^h		Reported receipt of free food (n=431)ⁱ		Reported exposure to fast food restaurant advertising on signs, branded uniforms, equipment, prizes or other items (n=431)^j	
	AOR^c (95% CI^d)	p-value	AOR^c (95% CI^d)	p-value	AOR^c (95% CI^d)	p-value
Children aged 10-12 years in Quebec versus those aged 10-12 years in Ontario	0.71 (0.39; 1.31)	.274	1.61 (0.89; 2.93)	.116	0.66 (0.39; 1.12)	.126
Children aged 10-12 years in Quebec versus those aged 13-17 years in Quebec	1.57 (0.76; 3.23)	.220	1.87 (0.97; 3.62)	.062	1.42 (0.79; 2.55)	.240
Children aged 10-12 years in Quebec versus those aged 13-17 years in Ontario	1.03 (0.55; 1.96)	.921	1.31 (0.73; 2.37)	.366	1.06 (0.61; 1.82)	.842
Children aged 10-12 years in Ontario versus those aged 13-17 years in Ontario	1.45 (0.80; 2.63)	.220	0.81 (0.45; 1.47)	.496	1.60 (0.95; 2.69)	.076

^aModels included age group (10-12 years/13-17 years), policy environment (Quebec/Ontario) and the age*policy environment interaction term and were adjusted for child sex (male/female) and race (White/Racial minority groups), and parent's ability to make ends meet (Very difficult and difficult/Neither difficult nor easy, easy and very easy). ^bThe province of Quebec restricts commercial advertising directed to children under 13 years. Sponsorship is permitted. However, sponsors that make products intended for children or appealing to them can only be advertised discreetly and cannot use mascots or logos. The province of Ontario does not restrict any food advertising directed to children. ^cAOR: Adjusted Odds Ratios. ^dCI: Confidence Intervals. ^eThe p-value of the age*policy environment interaction term is .604. ^fThe p-value of the age*policy environment interaction term is .177. ^gThe p-value of the age*policy environment interaction term is .866. ^hThe p-value of the age*policy environment interaction term is .867. ⁱThe p-value of the age*policy environment interaction term is .065. ^jThe p-value of the age*policy environment interaction term is .764.

In Quebec, Tim Hortons, McDonald's and Gatorade were the most reported brands seen advertised on signs, prizes and/or sports equipment by both children aged 10-12 years (29%, 9% and 9%, respectively) and those aged 13-17 years (27%, 10% and 6%, respectively; Table 3.8). Similarly, in Ontario, Tim Hortons and McDonald's were the most reported brands seen advertised on signs, prizes and/or sports equipment by both children aged 10-12 years (39% and 14%, respectively) and those aged 13-17 years (30% and 11%, respectively), followed by Pizza Pizza (6%) among the younger age group and Gatorade (10%) among the older age group.

The odds of reporting exposure to fast-food advertising on signs, prizes and/or sports equipment were 1.52 times higher among children aged 10-12 years compared to those aged 13-17 years (AOR 95% CI: 1.03, 2.23, $p=.035$) however differences in odds between children in Quebec and Ontario were not found to be statistically significant nor were differences between children aged 10-12 years in Quebec and other children not protected by Quebec's advertising restrictions.

Reported exposure to food brands promoted via free food, coupons and/or gift certificates: The most reported type of brand advertised by way of free food, coupons and/or gift certificates by both age groups in Quebec and Ontario was fast food restaurants (particularly coffee shops and burger restaurants in both provinces and sandwich restaurants in Quebec and pizza restaurants in Ontario) followed by beverage brands (particularly sports drinks) among children in Quebec and children aged 13-17 years in Ontario and sit-down restaurants among children aged 10-12 years in Ontario (Supplemental Table 3.9). The prevalence of reported exposure to fast-food advertising via free food, coupons and/or gift certificates was 31% among children aged 10-12 years in Ontario compared to 21 and 13% among children aged 10-12 and 13-17 years in Quebec, respectively, and 22% among children aged 13-17 years in Ontario.

Tim Hortons and/or McDonald's were among the most reported brands associated with the receipt of free food, coupons and/or gift certificates among children of both age groups in Quebec and Ontario.

Table 3.6 Prevalence of reported exposure to food advertising by type of brand, age group and policy environment among children aged 10-17 years in two Canadian provinces who reported playing on a sports team outside of school in the last 12 months (n=439)

	Prevalence of reported exposure on signs, sports prizes and/or uniforms, equipment or other items provided by their sports team by type of brand					
	Quebec^a			Ontario^b		
	10-12 yrs (n=106)	13-17 yrs (n=94)	Total (n=200)	10-12 yrs (n=123)	13-17 yrs (n=116)	Total (n=239)
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Fast food restaurants	44 (41.5)	33 (35.1)	77 (38.5)	66 (53.7)	48 (41.4)	114 (47.7)
Sit down restaurants	5 (4.7)	6 (6.4)	11 (5.5)	8 (6.5)	12 (10.3)	20 (8.4)
Beverage brands	16 (15.1)	15 (16.0)	31 (15.5)	11 (8.9)	18 (15.5)	29 (12.1)
Grocery stores	6 (5.7)	4 (4.3)	10 (5.0)	0 (0)	1 (0.9)	1 (0.4)
Dairy brands	1 (0.9)	1 (1.1)	2 (1.0)	0 (0)	0 (0)	0 (0)
Packaged food brands	1 (0.9)	0 (0)	1 (0.5)	2 (1.6)	1 (0.9)	3 (1.3)
Meat and dairy industry associations	1 (0.9)	2 (2.1)	3 (1.5)	0 (0)	2 (1.7)	2 (0.8)
Fruit farm	0 (0)	0 (0)	0 (0)	0 (0)	1 (0.9)	1 (0.4)
	Prevalence of reported receipt of free food, coupons and/or gift certificates by type of brand					
	Quebec^a			Ontario^b		
	10-12 yrs (n=106)	13-17 yrs (n=94)	Total (n=200)	10-12 yrs (n=123)	13-17 yrs (n=116)	Total (n=239)
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Fast food restaurants	22 (20.8)	12 (12.8)	34 (17.0)	38 (30.9)	26 (22.4)	64 (26.8)
Sit down restaurants	4 (3.8)	5 (5.3)	9 (4.5)	9 (7.3)	6 (5.2)	15 (6.3)
Beverage brands	7 (6.6)	7 (7.4)	14 (7.0)	1 (0.8)	8 (6.9)	9 (3.8)
Grocery store	4 (3.8)	2 (2.1)	6 (3.0)	0 (0)	0 (0)	0 (0)
Dairy brands	2 (1.9)	1 (1.1)	3 (1.5)	0 (0)	0 (0)	0 (0)
Meat and dairy industry association	0 (0)	0 (0)	0 (0)	0 (0)	1 (0.9)	1 (0.4)
Other	0 (0)	1 (1.1)	1 (0.5)	0 (0)	1 (0.9)	1 (0.4)

^aThe province of Quebec restricts all commercial advertising directed to children under 13 years. Sponsorship is permitted. However, sponsors that make products intended for children or appealing to them can only be advertised discreetly and cannot use mascots or logos. ^bThe province of Ontario does not restrict any food advertising directed to children.

Supplemental Table 3.7 The prevalence of reported exposure to subcategories of fast-food restaurants and beverage brands and the number of brands children aged 10-17 years in two Canadian provinces reported being exposed to on signs, prizes and/or uniforms, equipment or other items when playing on a sports team outside of school in the last 12 months by policy environment and age group

	Prevalence of reported exposure to subcategories of fast-food restaurants and beverage brands on signs, sports prizes and/or uniforms, equipment or other items provided by their sports team (n=439)					
	Quebec^a			Ontario^b		
	10-12 yrs (n=106)	13-17 yrs (n=94)	Total (n=200)	10-12 yrs (n=123)	13-17 yrs (n=116)	Total (n=239)
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Fast food restaurants	44 (41.5)	33 (35.1)	77 (38.5)	66 (53.7)	48 (41.4)	114 (47.7)
Coffee shop	31 (29.5)	25 (26.6)	56 (28.0)	48 (39.0)	36 (31.0)	84 (35.1)
Burgers	13 (12.3)	9 (9.6)	22 (11.0)	20 (16.3)	16 (13.8)	36 (15.1)
Pizza	3 (2.8)	1 (1.1)	4 (2.0)	8 (6.5)	10 (8.6)	18 (7.5)
Sandwiches	7 (6.6)	5 (5.3)	12 (6.0)	6 (4.9)	5 (4.3)	11 (4.6)
Dessert foods	2 (1.9)	1 (1.1)	3 (1.5)	2 (1.6)	1 (0.9)	3 (1.3)
Fried chicken	0 (0)	0 (0)	0 (0)	2 (1.6)	1 (0.9)	3 (1.3)
Other	1 (0.9)	1 (1.1)	2 (1.0)	2 (1.6)	0 (0)	2 (0.8)
Beverage brands	16 (15.1)	15 (16.0)	31 (15.5)	11 (8.9)	18 (15.5)	29 (12.1)
Sport drink	9 (8.5)	9 (9.6)	18 (9.0)	6 (4.9)	14 (12.1)	20 (8.4)
Soda/pop	8 (7.5)	4 (4.3)	12 (6.0)	4 (3.3)	8 (6.9)	12 (5.0)
Energy drink	0 (0)	2 (2.1)	2 (1.0)	1 (0.8)	1 (0.9)	2 (0.8)
Fruit juice	0 (0)	1 (1.1)	1 (0.5)	0 (0)	0 (0)	0 (0)
	The number of food brands children reported being exposed to on signs, sports prizes and/or uniforms, equipment or other items provided by sports teams among children who reported exposure to these types of advertising (n=269)					
	Quebec^a			Ontario^b		
	10-12 yrs (n=69)	13-17 yrs (n=54)	Total (n=123)	10-12 yrs (n=75)	13-17 yrs (n=71)	Total (n=146)
Median (IQR) ^c	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)
None ^d , n (%)	12 (17.4)	10 (18.5)	22 (17.9)	4 (5.3)	8 (11.3)	12 (8.2)
One, n (%)	30 (43.5)	20 (37.0)	50 (40.7)	38 (50.7)	30 (42.3)	68 (46.6)
Two, n (%)	20 (29.0)	16 (29.6)	36 (29.3)	26 (34.7)	20 (28.2)	46 (31.5)
Three or more, n (%)	7 (10.1)	8 (14.8)	15 (12.2)	7 (9.3)	13 (18.3)	20 (13.7)

^aThe province of Quebec restricts all commercial advertising directed to children under 13 years.

Sponsorship is permitted. However, sponsors that make products intended for children or appealing to them can only be advertised discreetly and cannot use mascots or logos.

^bThe province of Ontario does not restrict any food advertising directed to children.

^cIQR: Interquartile range

^dParticipants who responded “don’t know”.

Table 3.8 The prevalence of reported exposure to the food brands the most recalled by children aged 10-17 years in two Canadian provinces when playing on a sports team outside of school in the last 12 months by type of advertising, age group, and policy environment^a (n=439)

Prevalence of reported exposure on signs, sports prizes and/or uniforms, equipment or other items provided by their sports team					
Quebec					
10-12 years (n=106)			13-17 years (n=94)		
Rank	Brand	n (%)	Rank	Brand	n (%)
1	Tim Hortons	31 (29.2)	1	Tim Hortons	25 (26.6)
2	McDonald's	10 (9.4)	2	McDonald's	9 (9.6)
3	Gatorade	9 (8.5)	3	Gatorade	6 (6.4)
4	Subway	7 (6.6)	4	Subway	5 (5.3)
	Pepsi	7 (6.6)	5	Coca Cola	3 (3.2)
5	IGA	5 (4.7)		IGA	3 (3.2)
				Biosteel	3 (3.2)
Ontario					
10-12 years (n=123)			13-17 years (n=116)		
Rank	Brand	n (%)	Rank	Brand	n (%)
1	Tim Hortons	48 (39.0)	1	Tim Hortons	35 (30.2)
2	McDonald's	17 (13.8)	2	McDonald's	13 (11.2)
3	Pizza Pizza	7 (5.7)	3	Gatorade	12 (10.3)
4	Gatorade	5 (4.1)	4	Boston Pizza	7 (6.0)
	Subway	5 (4.1)	5	Pizza Pizza	5 (4.3)
5	Boston Pizza	4 (3.3)		Coca Cola	5 (4.3)
Prevalence of reported exposure via the receipt of free food, coupons and/or gift certificates					
Quebec					
10-12 years (n=106)			13-17 years (n=94)		
Rank	Brand	n (%)	Rank	Brand	n (%)
1	Tim Hortons	9 (8.5)	1	McDonald's	4 (4.3)
	McDonald's	9 (8.5)		Subway	4 (4.3)
2	Gatorade	5 (4.7)	2	Bio steel	3 (3.2)
3	Subway	4 (3.8)		Tim Hortons	3 (3.2)
				Mikes	3 (3.2)
Ontario					
10-12 years (n=123)			13-17 years (n=116)		
Rank	Brand	n (%)	Rank	Brand	n (%)
1	Tim Hortons	19 (15.4)	1	McDonald's	9 (7.8)
2	McDonald's	10 (8.1)		Tim Hortons	9 (7.8)
3	Pizza Pizza	4 (3.3)	2	Gatorade	7 (6.0)
			3	Pizza Pizza	5 (4.3)

^aThe province of Quebec restricts all commercial advertising directed to children under 13 years. Sponsorship is permitted. However, sponsors that make products intended for children or appealing to them can only be advertised discreetly and cannot use mascots or logos. The province of Ontario does not restrict any food advertising directed to children.

Supplemental Table 3.9 The prevalence of reported exposure to subcategories of fast-food restaurants and beverage brands and the number of brands children aged 10-17 years in two Canadian provinces reported being exposed to by way of gift certificates, coupons and/or free food when playing on a sports team outside of school in the last 12 months by policy environment and age group

	Prevalence of reported exposure to subcategories of fast-food restaurants and beverage brands via the receipt of free food, coupons and/or gift certificates (n=439)					
	Quebec^a			Ontario^b		
	10-12 yrs (n=106)	13-17 yrs (n=94)	Total (n=200)	10-12 yrs (n=123)	13-17 yrs (n=116)	Total (n=239)
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Fast food restaurants	22 (20.8)	12 (12.8)	34 (17.0)	38 (30.9)	26 (22.4)	64 (26.8)
Coffee shop	10 (9.4)	3 (3.2)	13 (6.5)	19 (15.4)	10 (8.6)	29 (12.1)
Burgers	9 (8.5)	4 (4.3)	13 (6.5)	10 (8.1)	9 (7.8)	19 (7.9)
Pizza	1 (0.9)	0 (0)	1 (0.5)	8 (6.5)	7 (6.0)	15 (6.3)
Sandwiches	4 (3.8)	4 (4.3)	8 (4.0)	3 (2.4)	0 (0)	3 (1.3)
Dessert foods	3 (2.8)	2 (2.1)	5 (2.5)	2 (1.6)	2 (1.7)	4 (1.7)
Fried chicken	0 (0)	0 (0)	0 (0)	2 (1.6)	1 (0.9)	3 (1.3)
Other	1 (0.9)	0 (0)	1 (0.5)	1 (0.8)	6 (5.2)	7 (2.9)
Beverage brands	7 (6.6)	7 (7.4)	14 (7.0)	1 (0.8)	8 (6.9)	9 (3.8)
Sport drink	6 (5.7)	4 (4.3)	10 (5.0)	1 (0.8)	8 (6.9)	9 (3.8)
Soda/pop	0 (0)	1 (1.1)	1 (0.5)	0 (0)	0 (0)	0 (0)
Energy drink	0 (0)	1 (1.1)	1 (0.5)	0 (0)	0 (0)	0 (0)
Fruit juice	1 (0.9)	1 (1.1)	2 (1.0)	0 (0)	0 (0)	0 (0)
	The number of food brands children reported being exposed to via the receipt of free food, coupons and/or gift certificates among children who reported exposure to these types of advertising (n=154)					
	Quebec^a			Ontario^b		
	10-12 yrs (n=43)	13-17 yrs (n=28)	10-12 yrs (n=43)	13-17 yrs (n=28)	10-12 yrs (n=43)	13-17 yrs (n=28)
Median (IQR) ^c	1 (0)	1 (0)	1 (0)	1 (1)	1 (1)	1 (1)
None ^d , n (%)	8 (18.6)	5 (17.9)	13 (18.3)	0 (0)	3 (7.7)	3 (3.6)
One, n (%)	25 (58.1)	17 (60.7)	42 (59.2)	32 (72.7)	21 (53.9)	53 (63.9)
Two or more, n (%)	10 (23.3)	6 (21.4)	16 (22.5)	12 (27.3)	15 (38.5)	27 (32.5)

^aThe province of Quebec restricts all commercial advertising directed to children under 13 years.

Sponsorship is permitted. However, sponsors that make products intended for children or appealing to them can only be advertised discreetly and cannot use mascots or logos.

^bThe province of Ontario does not restrict any food advertising directed to children.

^cIQR: Interquartile ranged

^dParticipants who responded “don’t know”.

Discussion

Overall, this study suggests exposure to food advertising in amateur sports settings among children aged 10 to 17 years living in Ontario and Quebec is common with over 60% of children, including those aged 10-12 years in Quebec, reporting exposure to at least one type of food advertising. Notably, the brands reported the most in this setting by both age groups in both policy environments were associated with unhealthy products, namely fast-food restaurants and sugary beverages. In Quebec, the prevalence of reported exposure to food advertising on sports equipment provided by sports teams was found to be statistically significantly lower than in Ontario. However, for all other types of food advertising examined, including fast food advertising on signs, prizes and/or sports equipment, no statistically significant differences in reported exposure between provinces were observed. Furthermore, contrary to our hypotheses, no differences in reported exposure to food advertising between children aged 10-12 years in Quebec and those not protected by Quebec's Consumer Protection Act, including children aged 13-17 years in Quebec and those of both age groups in Ontario, were found to be statistically significant. Taken together these findings suggest Quebec's law is not adequately protecting children under 13 years from exposure to food advertising in amateur sports settings.

The study's results may be explained by gaps in the design and application of Quebec's law. This policy does not prohibit the placement of advertising in sporting facilities however such advertisements cannot be designed in a way that targets or appeals specifically to children under 13 years.³⁸ Advertising stemming from the sponsorship of children's sports is also not expressly prohibited; however sponsoring companies "whose products are primarily intended for children or appeal to them" cannot advertise in a way that "arouses" their interest nor use a mascot or logo.³⁸ The name of sponsoring companies should alternatively be advertised "discreetly".³⁸ Although the law's application guidelines broadly cite "certain" candy, desserts and fast foods as examples of products that are intended for- or appealing to- children, limited guidance is provided relative to the diversity of companies, brands and products available in the marketplace.³⁸ One could argue that many of the brands respondents reported being exposed to (e.g. Tim Hortons, McDonald's, Gatorade, Subway, Pepsi) would appeal to children. One could also make the case that most types of food advertising examined in this study (e.g. branded sports equipment including uniforms, sports prizes, free food, coupons) constitute prominent forms of promotion that are inherently

child-directed by virtue of being given to- or worn by- children and would likely attract their attention. However, the guidance on the application of Quebec's law does not explicitly spell out exactly what forms of promotion in the context of sports sponsorship are restricted³⁸. For instance, it is unclear whether the placement of a company or brand's name on a child's jersey is in and of itself considered a form of promotion that attracts children's attention and is therefore prohibited or whether this type of promotion would be permitted if the company's name was displayed less prominently (e.g. written in small and plain font). Although the "discreet" mention of a company name on a sign is cited as permitted³⁸, no guidance is provided as to what this means in practice (e.g. permitted size or number of signs).

In addition to this ambiguity, a recent survey conducted among a small sample of children's sports clubs in Quebec suggested little to no awareness of the existence of rules pertaining to the sponsorship of children's activities, including sports (Pauzé et al. unpublished). Moreover, the Quebec government does not actively monitor compliance with its restrictions on child-directed advertising and instead relies on complaints made by members of the public or civil society for enforcement. As such, it is unknown whether the province's sponsorship-related advertising restrictions are being followed or consistently applied. While this study cannot assess compliance with Quebec's restrictions, clearer interpretation guidelines and increased awareness among sporting organisations in Quebec are likely needed to ensure the implementation of current rules, particularly if policy enforcement continues to rely on complaints.

In the current study, fast food restaurants were the most frequent type of brand children reported seeing promoted when playing sports. This is consistent with previous research from Canada and Australia that have documented the frequent presence of fast-food advertising or sponsorship in children's sports^{18-20, 22}. The two most common brands reported by children were Tim Hortons and McDonald's. These two fast-food chains have large corporate sponsorship programs in Canada. Tim Hortons currently sponsors more than 90,000 children who play hockey and over 220,000 children who play soccer⁴². This sponsorship program provides branded uniforms (i.e. jerseys, socks, shorts), medals, and equipment, depending on the sport⁴². McDonald's on the other hand sponsors the hockey teams of more than 53,000 children and provides branded jerseys, socks and tuques (i.e. knit caps) to players⁴³. While both restaurant chains are similar in prominence in Canada, their interpretation of- or compliance with- Quebec's law seems to differ. In Quebec,

McDonald's sponsors children aged 13-14 years, but in the rest of Canada sponsors children aged 9-10 years⁴⁸. Tim Horton's corporate program on the other hand sponsors children aged 4 to 8 years⁴², including in Quebec. Interestingly, Tim Hortons was the most frequently reported brand seen advertised on signs, prizes and/or sports equipment even though all survey respondents in this study were technically too old to benefit from their sponsorship program in the last year. Similarly, McDonald's was the second most reported brand by children aged 10-12 years in Quebec even if their sponsorship program is directed to older children. It is possible children's reported exposure to these brands stemmed from other sources such as advertising in sporting facilities^{15,16}, the sponsorship of other teams, including those of older children, or sponsorship received from individual franchisees.

Although this study was conducted before the implementation of the food industry's new self-regulatory advertising code, findings highlight notable gaps in the code's ostensible restrictions on sponsorship-related advertising directed to children under 13 years. For instance, the food industry has not elected to limit its use of brand advertising (e.g. branded sports equipment or prizes) and other forms of promotion (free food, coupons, gift certificates)³⁴ which were reported by 23-52% of children aged 10-12 years in Ontario. Given the food industry's limited commitment to curb its own advertising and the documented ineffectiveness of self-regulation³⁵, the provincial government of Ontario and other governments in Canada should consider adopting more comprehensive restrictions on unhealthy food advertising in amateurs sports setting, including advertising stemming from the sponsorship of children's sports.

The prevalence of reported exposure to food advertising on signs and sports equipment was higher in this study for both Ontario (43% and 54%, respectively) and Quebec (47% and 44%, respectively) compared to findings from the International Food Policy youth survey (IFPS) from 2019 which found that 36% of surveyed children aged 10-17 years reported exposure to food advertising on signs and 22% reported exposure on their sports equipment²¹. While it is possible the prevalence increased over time, divergences in survey design and sampling are more likely to explain differences. These survey items were similar to those used by the IFPS however the current study was designed to measure self-reported exposure to food advertising among children participating in team sports and individual sports involving competition outside of school during a 12-month recall period. In comparison, the IFPS's survey item identifying respondents who "play

on a sports team” did not define “sports team”, specify a recall period nor focus on sports participation in a particular environment⁴⁴. The IFPS’s sample also includes children from Canada’s ten provinces and its data is weighted to approximate a representative sample⁴⁹.

Findings should be interpreted considering the study’s strengths and limitations. Among its key strengths, this is one of the few studies to date to examine how policy environments in Canada may affect children's exposure to food advertising in amateur sports settings¹⁶, and the first to shed light on the effectiveness of Quebec’s sponsorship-related restrictions in protecting children from this exposure. The main limitations are fourfold. First, the study’s sampling method was non-probabilistic therefore its findings cannot be generalized to the population. However, the use of quota sampling helped to ensure sociodemographic variation in the study sample. Second, given its cross-sectional design, this study does not allow any inferences to be made about the impact of Quebec’s advertising restrictions. Third, the study sample was relatively small, which made it impossible to account for all potential confounders (e.g., type and number of sports played, size of the city of residence)^{18,19,23} in the analyses comparing reported exposure by policy environment. Since analyses were likely underpowered to detect some differences, particularly differences between age groups within and between provinces and for less frequently reported food advertising exposures (e.g. coupons, gift certificates and free food), results should be considered exploratory in nature and future surveys should be conducted with a larger sample size. Finally, while this study would have liked to exclusively measure children’s self-reported exposure to sponsorship-related advertising, particularly the sponsorship of children’s own sporting activities, the wording of the survey items and the subjective nature of measures make it difficult to establish with certainty the source of the reported exposure. For instance, signs that children reported seeing could have been related to point-of-sale marketing in sports facilities, particularly in the case of beverages^{16,50}. Recalled signs may have also stemmed from the sponsorship of sports facilities⁵⁰ or the sporting activities of other children. Children who reported the receipt of food, gift certificates and some branded items (e.g. water bottles) could have assumed these were provided by a food company when in fact they were purchased by their sports teams or a parent⁵¹. Overall, subjective recall constitutes an important source of bias and measurement error. Nevertheless, it should be noted that measures of self-reported exposure to advertising or specific ad campaigns have been shown to be sensitive to differences in- and changes to- policy environments and correlated with objective measures of advertising frequency and exposure⁵²⁻⁵⁸. As a result,

measures of self-reported exposure are considered appropriate for population-level studies. Furthermore, some of the study's findings seem to be corroborated by other sources. For instance, eight of the nine most reported food brands were identified as probable sponsors of children's sports clubs in Ontario and Quebec by a study auditing the websites and Facebook pages of a large sample of clubs in 2022-23 (Pauzé et al. unpublished). In addition to Tim Hortons and McDonald's, other frequently reported brands namely Gatorade, Boston Pizza, and Bio Steele are also known to have sponsorship programs or support children's sports⁵⁹⁻⁶¹.

Conclusion

Findings suggest that exposure to food advertising in amateur sports settings among children aged 10-17 years is prevalent, including among children under 13 years in Quebec. Quebec's Consumer Protection Act is not adequately limiting exposure to unhealthy food advertising among children under 13 years in this environment. More research is needed to corroborate these findings and determine whether the province's sponsorship-related restrictions are being implemented. Other governments in Canada should consider regulating food advertising stemming from sports sponsorship as well as advertising in sporting facilities, particularly as self-regulation is known to be ineffective³⁵.

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Chapter 3 – Integrated Discussion

3.1 Summary of findings

Research question 1: What is the prevalence of children's exposure to sponsorship-related food advertising in amateur sports settings in Canada and how does sports team participation and exposure to this advertising vary by demographic subgroups?

Findings from study 1 suggest exposure to food advertising in amateur sports setting is prevalent and some child subpopulations may be more exposed than others. Specifically, 34% of children aged 10-17 years living in Canada's ten provinces and who played on a sports team in 2019 reported exposure to food advertising on signs at their sporting event and 22% reported exposure to food advertising on their sports equipment. According to IFPS data from 2021, the prevalence of children's self-reported exposure to food advertising on signs and sports equipment in Canada is similar to other surveyed countries including Australia, Chile, Mexico, the United Kingdom and the United States (Hammond et al., 2023).

Notably, as reported by study 1, the odds of reporting exposure to this advertising, particularly on signs, was greater among male children compared to female children. The odds of reporting exposure on signs, sports equipment or at least one type of advertising was also higher among children living in Atlantic provinces, British Columbia, Ontario and/or the Prairies compared to Quebec. Finally, children who perceived their family's income as not being enough to meet their family's needs were more likely to report exposure on signs and sports equipment than children who perceived their family's income as being sufficient. These findings depart from existing research from Australia which did not find any statistically significant differences in food company sponsorship between clubs with a predominantly male membership versus those with a predominantly female membership nor among clubs located in areas of varying levels socio-economic disadvantage (Gonzalez et al., 2020; Kelly, Baur, Bauman, King, et al., 2011a; Martino et al., 2021). Contrary to other research, our study also did not observe any statistically significant differences by age group (Kelly, Baur, Bauman, King, et al., 2011a). While higher reported exposure among subgroups may indeed be attributable to differences in real exposure, some researchers have posited that these differences may also stem from differential cognitive responses to the content of the advertising (e.g. if it's targeted to a certain subpopulation) and to higher

cognitive load, particularly among individuals of lower socio-economic status, which has been shown to heighten the effect of advertising (Yau, et al. 2021).

Like other Canadian research, study 1 noted disparities in reported sports team participation suggesting that some child subpopulations may be more likely exposed to food advertising in this setting by virtue of higher participation (Canadian Fitness and Lifestyle Research Institute, 2022, 2025a, 2025b; Clark, 2008; Guèvremont et al., 2008; Irvine et al., 2022; ParticipACTION, 2024; Public Health Ontario, 2024). Specifically, male children and those who perceived their family's income as being adequate or more than adequate to meet their needs were more likely to report playing on a sports team than their respective counterparts. Conversely, children who identified as East/Southeast Asian were less likely to report participation compared to those who identified as White.

Research question 2: What type of food companies or brands are children exposed to in amateur sports setting in Quebec and outside Quebec?

Findings from study 2 and 3 suggest children are most frequently exposed to advertising promoting restaurants, particularly fast-food restaurants, as well as beverage brands in amateur sports settings. Specifically, in study 2, most food-related sponsors reported by surveyed sports clubs in both Ontario (76%) and Quebec (65%) were restaurants and a large share of these were large chains with 20 or more locations (ON: 66%, QC:44%). Fast-food restaurants accounted for half of reported food-related sponsors in Ontario and more than a third in Quebec. Similarly, in study 3, 48% of children aged 10-17 years who played or competed on a sports team in Ontario and 39% in Quebec recalled seeing a fast-food restaurant advertised on signs, sports prizes and/or sports equipment. Twenty-seven and 17% of these children in Ontario and Quebec, respectively, also reported receiving either food, coupons and/or gift certificates from a fast-food restaurant. The predominance or strong presence of restaurants or fast-food restaurants among the sponsors of children's sports clubs is consistent with other research in Canada and Australia (Gonzalez et al., 2020; Ooi et al., 2019; Pauzé et al., 2020; Watson et al., 2016). In study 3, beverage brands, particularly for sports drinks and soda/pop, were the second most recalled type of brands children recalled seeing on signs, sports awards and/or sports equipment in both Ontario and Quebec. Given that the survey with sports club did not yield any instance of sponsorship by a soft drink company,

this advertising may primarily stem from advertising in sports facilities as opposed to the sponsorship of children's sports activities (Prowse et al., 2025; Vanderlee et al., 2025).

Research question 3: Does children's exposure to food advertising in amateur sports settings differ between those protected by Quebec's advertising restrictions and those who are not protected?

Overall, this research did not yield much evidence that children protected by Quebec's advertising restrictions were less exposed to food advertising in amateur sports settings compared to other children. Exceptionally, in study 1, children aged 10 to 12 years living Quebec, were, as expected, less likely to report exposure to food advertising on signs compared to children of the same age living in other provinces. However, no such difference was observed in study 3 between children aged 10-12 years in Quebec and Ontario. In both studies, differences in reported exposure to food advertising on signs at their sporting events between children aged 10 to 12 years in Quebec compared to those aged 13 to 17 years in the province and in other provinces were also not found to be statistically significant. Similarly, contrary to expectations, differences in reported exposure to food advertising on sports equipment and other types of advertising (i.e. branded awards, free food, coupons/gift certificates, promotion of fast food) were also not found to be statistically significant between children protected and not protected by Quebec's advertising restrictions.

Research questions 4 and 5: What is the frequency of food company sponsorship of children's sports clubs in Quebec and outside Quebec and what type of food advertising stems from this sponsorship? And what in-kind and financial benefits do these clubs derive from food company sponsorship?

Findings from study 2 suggest food company sponsorship of children's sports clubs and teams in both Ontario and Quebec is prevalent, with about half of clubs reporting sponsorship from at least one food-related sponsor (ON: 47% of clubs; QC: 55%). This prevalence is similar to that reported by a study auditing the websites of 67 children's sports clubs in Ottawa for the 5 most popular sports which suggested that 40% of clubs were sponsored by a food-related company (Pauzé et al., 2020). Although surveyed clubs in both provinces derived multiple benefits from food company sponsorship, most frequently funding (ON:21% of clubs, QC: 25%) , uniforms (ON:19%, QC: 18%), food (ON:15%, QC:28%), medals/trophies (ON:13%, QC:18%), and coupons (ON:6%, QC:13%), the value of these contributions was small relative to club's total revenue (i.e. $\leq 1\%$ for funding; $\leq 1.5\%$ for in-kind benefits) in most cases. In exchange for these contributions, food-related sponsors were most often advertised on club or team websites or social media pages (ON:

81% of sponsors, QC:64%), on signs at events (ON: 7% QC: 55%), and on uniforms (ON: 63% QC: 40%) and trophies/awards (ON: 19% QC: 10%), particularly those worn by or given to children aged 12 years and under. In both provinces, food-related sponsors most often promoted on uniforms, medals/trophies and sports equipment provided to children aged 12 years and under were fast-food restaurants. The benefits of food company sponsorship derived by surveyed sports clubs and their sponsors are broadly similar to those reported by Kelly et al. (2011a) who surveyed 109 sports clubs in Australia in 2009. However, in our study, a notably larger share of food-related sponsors directly provided uniforms (20%) to sports clubs, and a smaller share provided coupons/vouchers for players (9%) compared to those in Australia (2% and 29%, respectively) (Kelly, Baur, Bauman, King, et al., 2011a). Notwithstanding, a similar share of food-related sponsors were advertised on children's uniforms (48% versus 53%) (Kelly, Baur, Bauman, King, et al., 2011a). The apparent differences between our study and Kelly et al.'s (2011a) may be an artifact of sampling differences or may be related to changes or differences in industry practices over time or between countries.

3.2 Implications for children's health

Overall, the findings of this research suggest that children's exposure to food marketing in amateur sports settings is common and often promotes brands associated with unhealthy products such as fast food or large chain restaurants and sugary beverage brands (mostly sport drinks and soda/pop). Foods sold in large restaurant chains in Canada are energy-dense and contain high amounts of saturated fats, sodium and/or sugars, which children in Canada currently consume in excess (Bernstein et al., 2023; Smith et al., 2021; Yang et al., 2023). Sugary beverages for their part have a lower effect on satiety than solid food and likely contribute to the overconsumption of calories (Malik & Hu, 2022). The consumption of both fast food and sugary drinks has been associated with higher body mass index among children (Braithwaite et al., 2014; Emond et al., 2020; Malik & Hu, 2022; Nguyen et al., 2023). As such, the heavy promotion of these types of food in amateurs sports settings is concerning for children's health, particularly given the known influence of food marketing on their dietary preferences and intake and on antecedents of these outcomes (e.g. brand awareness, brand attitudes) (Boyland, McGale, Maden, Hounsome, Boland, Angus, et al., 2022; Cairns et al., 2013; Evans et al., 2023; Kelly et al., 2015; Norman et al., 2016). The association of food fast and sugary drinks with sports is also problematic given that sports sponsorship has been

shown to positively influence brand attitudes towards unhealthy food brands (Scully et al., 2020). Other forms of sports-themed marketing have also been shown to positively influence the perceived healthfulness of foods (Dixon et al., 2011). As such, sports sponsorship may have a “health halo” effect (Scully et al., 2020). Broadly, the effect of food advertising exposure in amateur sports settings on children is undoubtedly compounded by their high level of exposure or probable exposure to unhealthy food marketing in other settings they frequent and media they consume (Vanderlee et al., 2025).

Notably, findings from study 1 suggests sports sponsorship and other advertising in amateur sports settings, like other forms of advertising (Backholer et al., 2021; Castronuovo et al., 2021; Finlay et al., 2022; Fleming-Milici & Harris, 2018; Velazquez et al., 2017), may reach and affect some child subpopulations more than others (Backholer et al., 2021; Castronuovo et al., 2021; Finlay et al., 2022; Fleming-Milici & Harris, 2018; Velazquez et al., 2017). This may be the case for male children given that they were both more likely to report exposure to food advertising on signs at their sporting events and, consistent with other research (Canadian Fitness and Lifestyle Research Institute, 2022, 2025a; Irvine et al., 2022; ParticipACTION, 2024), more likely to report playing on a sports team than their female counterparts. Although children who perceived their family’s income as inadequate were also more likely to report exposure to food advertising in this setting, it is unclear whether this group is more exposed and affected by this advertising overall. Contrary to other settings or sources of marketing (e.g. television, outdoor media, schools, retail) (Acton et al., 2023; Backholer et al., 2021; Finlay et al., 2022; Velazquez et al., 2017), advertising in amateur sports may reach a greater number of children from higher socio-economic status households because of higher sports participation. Overall, it is difficult to determine whether sports sponsorship and other advertising in amateur sports settings are contributing to social disparities in total exposure to unhealthy food marketing and diet. Notwithstanding, comprehensive food marketing restrictions will likely be required to ensure the adequate protection of all children particularly as differences in exposure by age, sex, race/ethnicity or socio-economic status in Canada appear to be specific to certain promotional strategies, media or settings (Acton et al., 2023; Amson et al., 2023; Czoli et al., 2020; Pauzé & Potvin Kent, 2021; Potvin Kent et al., 2024; Potvin Kent, Pauzé, et al., 2019; Potvin Kent, Soares Guimaraes, et al., 2023; Potvin Kent, Soares Guimarães, et al., 2023; Vergeer et al., 2025).

3.3 Implications for policy and future research

Quebec's Consumer Protection Act

Findings of all three studies suggest that Quebec's CPA is not adequately protecting children under 13 years from unhealthy food advertising in amateur sports settings. Despite the province's advertising restrictions, many Quebecois children under 13 years surveyed in study 1 and 3 reported exposure to various types of food promotion (e.g. signs, sports equipment, free food) in this setting and there was little evidence that reported exposure differed between these children and those not protected by Quebec's law both within and outside the province. Contrary to what seems to be permitted by the CPA, study 2 found that sponsoring food companies, including some that are likely appealing to children (e.g. fast-food restaurants), were promoted in ways that could be considered prominent and would likely get children's attention (e.g. name or logo on uniforms, medals, sports equipment). Notably, most surveyed sports clubs in Quebec did not seem to be aware of the CPA's sponsorship-related advertising restrictions. This suggests they are not being widely implemented. This may be the case because the Quebec government does not actively monitor or assess compliance with the CPA and instead relies on complaints to identify instance of noncompliance. In addition, available information on the application of sponsorship-related restrictions is sparse. To improve the implementation of the CPA, an awareness campaign targeting sports clubs and clearer guidance will likely be needed. Active monitoring or compliance assessment would also help with enforcement however this would likely require more resources.

Overall, findings from this research are consistent with other Canadian studies or reports that have found that Quebec's CPA is not adequately protecting children under 13 years from unhealthy food marketing (Pauzé et al., 2021; Potvin Kent et al., 2012; Potvin Kent, Guimaraes, et al., 2023; Vergeer et al., 2025). This is the case because this law was not specifically designed to protect children from exposure to food marketing but rather designed to protect them from the commercialisation of childhood. Though evidence suggests children in Quebec are less exposed to advertising with content expressly directed to children (e.g. promotional characters, child actors) than those in Ontario, they continue to be frequently exposed to unhealthy food marketing in various media and settings (Pauzé et al., 2021; Potvin Kent et al., 2011, 2012; Potvin Kent, Guimaraes, et al., 2023; Potvin Kent, Pauzé, et al. 2023; Vergeer et al., 2025). To adequately protect children in Quebec, nutrient criteria defining which products or brands would be

considered unhealthy would need to be adopted. Restrictions would also have to be designed to limit the placement of unhealthy food advertising in media and settings where children can be reached and not just limit the use of creative content deemed “child-directed”. As aforementioned, better compliance monitoring and more resources for enforcement would likely be needed.

If efforts were made to support the implementation of sponsorship-related restrictions, research could be carried out to assess their effects on the extent and nature of advertising stemming from sponsorship, on children’s exposure, and on the sponsorship revenue of sports clubs and their adaption to restrictions. Such research would be useful in informing the design of sponsorship restrictions in other jurisdictions, particularly as Quebec’s restrictions are quite unique and been used to inform considered restrictions at the federal level in Canada.

Industry self-regulation

In June 2023, the food industry in Canada adopted a new self-regulatory code that ostensibly limits some product advertising stemming from the sponsorship of sporting activities for children under 13 years (Association of Canadian Advertisers et al., 2022). Although this code was not in effect during the recall period of all studies, findings collectively suggest this code is not comprehensive enough to meaningfully reduce children’s exposure to sponsorship-related advertising given that it does apply to any brand advertising, like branded sports equipment, which 25% of surveyed children aged 10-12 years living outside Quebec in study 1 and 52% in study 3 reported being exposed to. Similarly, 26% of clubs surveyed in Ontario also reported promoting at least one food-related sponsor on uniforms, mostly on those of children aged 12 years and under and primarily advertising fast-food restaurants. The food industry’s code also does not appear to limit other forms of sponsorship-related advertising documented by this research including the provision of free food and coupons or vouchers. These findings are consistent with research in Canada that have identified notable gaps in the food industry’s self-regulatory initiatives and supports the need for government-led mandatory restrictions to protect children from unhealthy food marketing, as recommended by the WHO most recent guidelines (Potvin Kent et al., 2018; Potvin Kent, Pauzé, et al., 2019; Potvin Kent, Soares Guimaraes, et al., 2023; Potvin Kent, Velazquez, et al., 2019; Potvin Kent & Pauzé, 2018; Potvin Kent & Wanless, 2014).

Although industry's newest self-regulatory code is not expected to be effective, future research could assess its impact using IFPS's data which include annual measures of children's self-reported exposure to food advertising in amateur sports settings since 2019. Specifically, its impact could be assessed by comparing the prevalence of exposure before and after the introduction of the code among children in Canada and contrasting these temporal changes with those observed in comparable countries that do not have any restrictions on sponsorship-related advertising (e.g. United States, United Kingdom). Using other countries as control groups would help distinguish the effect of the advertising code, if any, from secular trends (Hammond et al., 2022).

Current and considered food advertising restrictions of the federal government

In recent years, the federal government had considered adopting restrictions on food advertising "primarily directed" to children under 13 years. Although some limits on sponsorship-related advertising had been considered, these were ultimately excluded from the most recent policy proposal which limited the scope of considered restrictions to advertising on television and digital media (Health Canada, 2018b, 2023a). The findings of this research highlight several gaps in these restrictions. Most obviously, the exclusion of children's sports sponsorship from federal restrictions would continue to allow children to be exposed to unhealthy food marketing in amateur sports settings thus limiting their effectiveness. Even if these restrictions did apply to sponsorship, the exclusion of children aged 13 to 17 years, among whom 39% in study 1 and 65% in study 3 reported exposure to food advertising in amateur sports settings, would leave them unprotected despite their known susceptibility to the influence of food marketing (Harris et al., 2021; Qutteina et al., 2019). The exclusion of children aged 13 to 17 years in future restrictions could also result in the migration of sponsorship to this older age group, as evidenced by McDonald's corporate sponsorship program which is exceptionally directed to children over 13 years in Quebec, presumably due to provincial restrictions (McDonald's Canada, n.d.-a, n.d.-b). As other Canadian research has highlighted (Minaker et al., 2025; Valderrama et al., 2023), the government's proposed focus on advertising "primarily directed" to children has important gaps. In the context of amateur sports, such an approach would exclude advertising that cannot be characterized as specifically targeted at children such as most advertising in recreational and sports facilities stemming from food service contracts, the sponsorship of facilities or other sources which have been documented by other research (Prowse et al., 2018, 2025; Vanderlee et al., 2025) and was

likely captured by children's self-reported exposure to food advertising on signs in studies 1 and 3.

Although broad restrictions on unhealthy food advertising have not yet been adopted, the marketing of caffeinated energy drinks to children aged 12 years and under is prohibited by the federal government (Health Canada, 2013). This research, specifically studies 2 and 3, did not find any evidence of such marketing directed to children of this age suggesting compliance with these restrictions. Notably, sponsorship by energy drinks companies was viewed as inappropriate by many surveyed sports club representatives (Pauzé et al. unpublished).

Ideally, restrictions on food company sponsorship in Canada would be government-led, would protect children of all ages and would use stringent and evidenced-informed nutrient criteria to define which products and brands are considered unhealthy (World Health Organization, 2023). Restrictions should comprehensively limit all forms of marketing stemming from sponsorship that children are exposed to including signs, branded sports equipment and uniforms, naming rights, announcements at sporting events and the provision of free food, coupons, vouchers and gift certificates. Other forms of advertising unlikely to reach children like emails or newsletters sent to parents or advertising on club websites could be permitted. Importantly, these restrictions would need to apply to both the promotion of products and of brands. Brand marketing features branding elements (e.g. logos) without promoting a specific product.

Feasibility of sponsorship restrictions

Despite concerns that restricting food company sponsorship may have negative consequences on the accessibility of children's sports (Health Canada, 2017; Senate of Canada, 2018; Sport Matters Group, 2018), findings from study 2 suggest the financial impact of such restrictions may be limited. This study found that the value of financial and in-kind benefits that sports clubs derived from food-related sponsors was small relative to their total annual revenue in most cases. Given that only a small sample of sports clubs in Ontario and Quebec participated in this study and the survey coincided with an atypical period affected by the covid pandemic, more research is likely needed to support this finding. A similar survey should be conducted among a larger number of sports clubs and sports clubs should be sampled from across Canada.

Financial assistance programs for children's sports participation

In study 1, children who perceived their family's income to be inadequate to meet their needs were less likely to report playing on a sports team than children who perceived their family's income as being adequate. This finding is consistent with other Canadian research that have noted long-standing socio-economic disparities in sports participation among children (Canadian Fitness and Lifestyle Research Institute, 2022; Clark, 2008; Guèvremont et al., 2008; ParticipACTION, 2024; Public Health Ontario, 2024). Assistance programs seeking to address financial barriers to sports participation in Canada do exist. These include government and sponsor-funded programs like KidSport and Jumpstart that provide grants to children from low-income households to cover, in whole or in part, the registrations fees for sports activities (Jumpstart, n.d.-b; KidSport Canada, n.d.). To date, little research has assessed the effectiveness of these programs (Clark et al., 2022; Fortune & Oncescu, 2025; Holt et al., 2011; Oncescu et al., 2023; ParticipACTION, 2024). However, existing Canadian research suggests they may not be sufficiently promoted and may fall short of meeting people's needs as they do not cover all costs tied to sports participation (e.g. transportation, equipment, tournament fees) (Clark et al., 2022; Fortune & Oncescu, 2025; Holt et al., 2011). The eligibility criteria of some of these programs have also been reported as too restrictive, excluding some children in need (Oncescu et al., 2023). Evaluating these financial assistance programs and ensuring they provide sufficient funding and are easily accessible may help to mitigate the potential impact that sponsorship restrictions may have on the accessibility of sports, if any, and may help to address concerns of some stakeholders.

3.4 Considerations for future monitoring

Monitoring food marketing in various environments frequented by children is considered important to justify and advocate for marketing restrictions and to design and evaluate related policies (Kelly, Backholer, et al., 2023). Recruitment and measurement challenges encountered during the survey with sports representatives highlight important considerations for future monitoring research. In terms of participation, the response rate was low and varied by sport. The survey took at least 30 minutes and often longer, which may have discouraged many sports clubs from participating. As is the case for any study, future surveys should be streamlined and be as short as possible to favour participation. This is particularly warranted given that sports clubs administrators are often volunteers. Given the number of clubs that were invited to participate, we

opted not to follow-up with any by phone unless they expressed an interest in participating. Randomly sampling a subset of sports clubs in selected cities and population centers would have allowed more time and resources to do such follow-ups. Doing so may have increased participation, particularly if emails were not closely monitored. Notwithstanding, the availability of contact information including phone numbers was variable across sports clubs and hampered our ability to directly reach prospective respondents with knowledge of funding sources and sponsorship. Future research could consider recruiting sports clubs via provincial or regional sports organization however this may not be possible for all sports. For certain sports like hockey and figure skating, most clubs appear to be affiliated with the provincial or regional organizing bodies (Greater Toronto Hockey League, 2025; Hockey Eastern Ontario, n.d.; Hockey Québec, n.d.; Ontario Minor Hockey Association, n.d.; Patinage Québec, n.d.; Skate Ontario, n.d.). This is less clear for other sports. In the case of soccer, only select clubs that meet certain criteria are sanctioned by provincial sports bodies (Ontario Soccer, n.d.; Soccer Québec, n.d.) therefore recruiting exclusively through these body may skew the sample towards larger clubs located in large urban areas while excluding smaller clubs in these areas and those in smaller population centers. Future studies should consider examining fewer sports and/or tailoring their recruitment strategy and survey by sport. Finally, in a few instances, interested sports club representatives chose not to participate because it was conducted over the phone as opposed to being self-administered online. Its possible online administration would have favoured participation. Future studies could consider piloting an online survey. Although this may encourage participation, it may also have some implications for data quality given the absence of probing.

The survey with sports club representatives also revealed difficulties in measuring sponsorship. In some cases, the solicitation of sponsors was centralized and carried out by the club while in other cases sponsors were sought by individual teams or by both clubs and teams. Although we had created a survey for team representatives to complete, it was not always possible for clubs to reach coaches from a previous season, and the level of response was variable, in part because the burden of sending this survey and following up fell on club representatives. Recall bias was also evident as respondents overlooked sponsors listed on their websites. The fact that the survey's recall period was a previous fiscal year, which may have ended several months earlier, likely increased the risk of memory lapses. It was also evident that sports club had different interpretations of what constituted sponsorship. To improve the quality of the data, future surveys should probe sports

clubs about sponsors listed on their website, as was done in this study. Recruiting sports clubs near the end of their sporting season and/or timing the administration of the survey with the end of the current fiscal year, would be ideal. Providing a definition of sponsorship is also critical.

3.5 Strengths and limitations

Research findings should be interpreted with caution given study limitations. All surveys relied on self-reporting and were therefore subject to recall bias. Response rates were low and samples were not nationally or provincially representative, thus limiting the generalizability of findings (Hammond et al., n.d.). Though studies offered valuable insights on the effectiveness of Quebec's CPA, the cross-sectional design of studies did not allow any inferences to be made about its impact. Furthermore, studies examining differences in reported exposure between children protected and not protected by Quebec's CPA may have been underpowered. As such findings should be considered exploratory.

Notwithstanding, this research provided data on food company sponsorship of children's sports needed to support and inform policy in Canada. It has yielded valuable insights on the effectiveness or likely effectiveness of current or considered government and self-regulatory advertising restrictions. Though samples were not nationally or provincially representative, efforts were made to recruit a diverse sample of respondents and sports clubs and in one instance, data weights were used to approximate nationally representative findings. The examination of food company sponsorship of children's sports using multiple data sources provided complementary and corroborating evidence on the extent and nature of this type of food marketing in Canada. This research has also made some unique contributions to the broader literature on this topic. It is the first study to examine social disparities in exposure to sponsorship-related food advertising using individual-level data and the first to measure or estimate the value of financial and in-kind benefits that sports clubs derive specifically from food-related sponsors.

3.6 Future directions

More research on food company sponsorship of sports in Canada is likely needed to inform policy. Future research should examine the extent to which national and provincial sports organizations are sponsored by food companies and whether this sponsorship translates to exposure to unhealthy food marketing among children. The acceptability of sponsorship restrictions among stakeholders

(e.g. parents, local sports clubs and other sports organizations) is likely an important consideration for policymaker considering these restrictions. Research in other countries suggest fairly high level of support (50-76%) among parents or sports club representatives for some marketing restrictions associated with food company sponsorship of children's sports (Donaldson & Nicholson, 2020; Kelly et al., 2012, 2013; Zorbas et al., 2023). No such data is currently published in Canada. However, preliminary data collected by the telephone survey with sports clubs found that 51% of respondents would likely support a policy which restricted unhealthy food and beverage companies from sponsoring the sporting activities of children aged 12 years and under while 55% were likely to support such restrictions for the sporting activities of children aged 13-17 years (Pauzé et al. unpublished). Similarly, an online survey conducted in 2022 also found that 50-58% of the 841 parents with children playing on a sport team surveyed in Ontario and Quebec were likely to support such a policy (Pauzé et al. unpublished). Notably, the factors that underpin various positions on sponsorship restrictions have not been explored. Such data could be useful to address stakeholder concerns and explore various policy options that may be more socially acceptable than an absolute prohibition of sponsorship promoting unhealthy foods or brands. Depending on the findings of future research, it may be necessary to raise awareness or educate parents and sports clubs on the level of resources that food company sponsors provide to children's sports, particularly if this does not align with their perceptions. This may help garner support for sponsorship restrictions. Finally, considering that children watch professional sports, future research should also seek to quantify and characterize children's exposure to food marketing via this source. Research from other countries have found the promotion of brands associated with unhealthy food products is pervasive in professional sports and can result in high exposure among children (Alfayad et al., 2022; Bragg et al., 2018; Nuss et al., 2019; Sherriff et al., 2010). Such data is likely needed to support the inclusion professional sports in marketing restrictions considered in the future.

3.7 Future knowledge translation

Summary of these research findings will be shared with knowledge users in Quebec, including public health advocates at Le collectif vital and l'Office de la protection du consommateur, the government department responsible for the enforcement of the CPA. Findings will also be shared with knowledge users advocating for food marketing restrictions at the federal level, particularly

Heart & Stroke, as well as with senior bureaucrats at Health Canada's Bureau of Healthy Eating Policy and Promotion. Finally, a summary of findings from study 2 will be shared with surveyed sports clubs and a media release will be prepared and shared when study findings are published.

3.8 Conclusion

Overall, this research suggests children are frequently exposed to food advertising stemming from the sponsorship of their sporting activities and likely other sources in amateur sports settings. This advertising often promotes brands associated with unhealthy products such as fast food or large chain restaurants and sugary drinks. Existing policies in Canada do not appear to adequately protect children from this exposure. For instance, the food industry's newest self-regulatory code does not limit many forms of sponsorship-related advertising reported by children and sports clubs and as such, is not likely to be effective. Although the province of Quebec does have statutory restrictions limiting the child appeal and visibility of sponsorship-related advertising directed at children under 13 years, awareness of provincial restrictions among children's sports clubs also appeared to be low. The government of Quebec should consider measures to support the implementation and enforcement of its sponsorship-related restrictions while other governments in Canada should consider adopting their own restrictions to limit children's exposure to unhealthy food advertising stemming from sports sponsorship. Notably, this research found that, in most cases, the total value of the financial and in-kind benefits that surveyed sports clubs in Ontario and Quebec derived from food-related sponsors was small relative to their total revenue. As such, restricting some food company sponsorship may be feasible and have a limited financial impact on most children's sports clubs operating at the local level. To confirm these findings, future research examining the benefits derived from food company sponsorship should be conducted among a larger and more nationally representative sample of sports clubs.

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Appendices

Appendix I: Ethics certificate for Study 1 (H-06-20-5908)

13/08/2020

Université d'Ottawa
Bureau d'éthique et d'intégrité de la recherche

University of Ottawa
Office of Research Ethics and Integrity

CERTIFICAT D'APPROBATION ÉTHIQUE | CERTIFICATE OF ETHICS APPROVAL

Numéro du dossier / Ethics File Number	H-06-20-5908
Titre du projet / Project Title	International Food Policy Study: The impact of food policies on youth
Type de projet / Project Type	Recherche de professeur / Professor's research project
Statut du projet / Project Status	Approuvé / Approved
Date d'approbation (jj/mm/aaaa) / Approval Date (dd/mm/yyyy)	13/08/2020
Date d'expiration (jj/mm/aaaa) / Expiry Date (dd/mm/yyyy)	06/11/2020

Équipe de recherche / Research Team

Chercheur / Researcher	Affiliation	Role
Monique POTVIN KENT	Département d'épidémiologie et santé publique / Department of Epidemiology and Public Health	Chercheur Principal / Principal Investigator
Elise PAUZE	École interdisciplinaire des sciences de la santé / Interdisciplinary School of Health Sciences	Assistant de recherche / Research Assistant
David HAMMOND	University of Waterloo	Chercheur principal - site d'examen primaire / Primary review site PI

Conditions spéciales ou commentaires / Special conditions or comments

Please note that the expiry date is matches with the one on the certificate from the University of Waterloo.

Appendix II: Ethics certificate for Study 2 and 3 (H-09-21-7089)

22/02/2022

Université d'Ottawa

Bureau d'éthique et d'intégrité de la recherche

University of Ottawa

Office of Research Ethics and Integrity

CERTIFICAT D'APPROBATION ÉTHIQUE | CERTIFICATE OF ETHICS APPROVAL

Numéro du dossier / Ethics File Number

H-09-21-7089

Titre du projet / Project Title

Food and beverage sponsorship
of children's sports in two policy
environments

Type de projet / Project Type

Recherche de professeur /
Professor's research project

Statut du projet / Project Status

Approuvé / Approved

Date d'approbation (jj/mm/aaaa) / Approval Date (dd/mm/yyyy)

22/02/2022

Date d'expiration (jj/mm/aaaa) / Expiry Date (dd/mm/yyyy)

21/02/2023

Équipe de recherche / Research Team

**Chercheur /
Researcher**

Affiliation

Role

Monique POTVIN
KENT

Département d'épidémiologie et santé publique / Department of
Epidemiology and Public Health

Chercheur Principal / Principal
Investigator

Elise PAUZÉ

École interdisciplinaire des sciences de la santé / Interdisciplinary
School of Health Sciences

Étudiant-chercheur /
Student-researcher

Catherine MAH

Dalhousie University

Co-chercheur / Co-investigator

Monica TALJAARD

Département d'épidémiologie et santé publique / Department of
Epidemiology and Public Health

Collaborateur / Collaborator

Jemila HAMID

Département de mathématiques et statistiques / Department of
Mathematics and Statistics

Collaborateur / Collaborator

Conditions spéciales ou commentaires / Special conditions or comments

Appendix III: Survey administered to sports club representatives for Study 2

Part 1 - Club characteristics

To start, I'd like to get some details on your club.

1. Can you confirm the name of your sports club is **(insert name of the club/organization)?** (Kelly, 2012) **(do not read responses below)**
 - a) Yes, correct name
 - b) No **(record name):** _____
2. And what is your position at **(insert club/organization name)?** (Kelly, 2012) **(do not read responses below; select answer)**
 - a) Club secretary
 - b) Club president
 - c) Club treasurer or financial officer
 - d) Other committee member or director
 - e) Club member that is not on the board of directors
 - f) Other

**** ONLINE FORM ****

To fill out BEFORE the start of the survey:

INPUT THE PARTICIPANT CODE: [open field]

Specify sport(s)

- ☐ Hockey
- ☐ Soccer
- ☐ Basketball
- ☐ Baseball
- ☐ Volleyball
- ☐ Figure skating
- ☐ Swimming
- ☐ Gymnastics

Specify province

- ☐ Ontario
- ☐ Québec

START OF THE SURVEY

1. In 2021-22, between what months of the year was your club/organization engaged in its sporting activities? We'd like to know when your last completed sporting season started and ended. (Kelly, 2012, modified) **(do not read responses)**
 - a) All year (**Follow-up: When does your season or fiscal year start and end? *input in open field***)
 - b) Other - Between (month/year sporting activities start) and (month/year sporting activities end) **[open field - INPUT ANSWER AS "Between (month/year) and (month/year)"]**
Comment (input any relevant comment here): [open field]

2. (Recall period specified in Q5), how many playing members were registered with your club? (Kelly, 2012) _____ **(write down number)**

3. Roughly what proportion of players/athletes were male? (Kelly, 2012, modified)
(do not read responses; note answer in comment box below and select one response category)

If they respond 50%, follow-up and ask if they think there are slightly more males or slightly more females.

- a) None
- b) Less than a quarter ($< 1/4$)
- c) A quarter to less than half ($\geq 1/4$ and $< 1/2$)
- d) A half to three-quarters ($\geq 1/2$ and $3/4$)
- e) More than three quarters ($\geq 3/4$)
- f) All players are male
- g) Don't know
- h) Refuse to answer

Comment (input exact answer given here): [open field]

4. Roughly what proportion of all players/athletes were young people aged 17 years and under? (Kelly, 2012, modified) **(do not read responses; note answer in comment box below and select a response category)**

If they are having difficulty answering – prompt them to think about the number of child and adolescent teams vs the number of adult teams

- a) None **(INELIGIBLE – END THE INTERVIEW)**
- b) Less than a quarter ($< 1/4$)
- c) A quarter to less than half ($\geq 1/4$ and $< 1/2$)
- d) A half to three-quarters ($\geq 1/2$ and $3/4$)
- e) More than three quarters ($\geq 3/4$)
- f) All players are 17 years old or younger
- g) Don't know
- h) Refuse to answer

Comment (input answer given here): [open field]

5. Of the players/athletes aged 17 and under, roughly what proportion were young people aged 12 years and under? (Kelly, 2012, modified) **(do not read responses; note answer in the comment box below and select one response category)**

If they are having difficulty answering – prompt them to think about the number of child teams vs the number of adolescent teams

- a) None
- b) Less than a quarter ($< 1/4$)
- c) A quarter to less than half ($\geq 1/4$ and $< 1/2$)
- d) A half to three-quarters ($\geq 1/2$ and $3/4$)
- e) More than three quarters ($\geq 3/4$)
- f) All players are 12 years old or younger

- g) Don't know
- h) Refuse to answer

Comment (input answer given here): [open field]

6. Does your club have teams or programs that are recreational, competitive, or both? **(do not read responses)**
- a) Recreational teams/programs
 - b) Competitive teams/programs
 - c) Both recreational and competitive teams/programs
 - d) Don't know
 - e) Refused to answer

Comment: [open field]

7. Does your club have an adapted program for children or adolescents with physical or cognitive disabilities?
- a) Yes
 - b) No
 - c) Don't know
 - d) Refused to answer

Comment: [open field]

8. Is your club a non-profit organisation?
- a) Yes
 - b) No
 - c) Don't know
 - d) Refused to answer

Comment: [open field]

PART B - Club funding and receipt of sponsorship

I'd now like to ask you questions about how your sports club is funded and supported.

9. What were the annual/seasonal registration fees for children aged 17 and younger who are enrolled in your recreational teams or programs? Does this vary by age group? (Kelly, 2012, modified)
[open field]
10. What were these fees for competitive teams or programs? Do these fees vary by age group?
[open field]
11. Which of the following expenses are covered by registration fees? Do registration fees cover general operating costs? What about...**(List expenses; select response accordingly)** (Kelly, 2012, modified)

	Yes	No	Does not know	Refused to respond
general running/operating costs?				
salaries (including registrar, coaches)?				
official/umpire/ref fees?				
equipment?				
uniforms?				

travel costs, including accommodations?				
facility improvements or rental (e.g., ice/pool time, gymnasium, soccer fields)?				
club insurance?				
membership fee to regional sporting organization?				
tournament fees?				
subsidy covering registration fees for low-income players/athletes?				
Anything else? (Specify.)				

Specify other expenses: [open field]

12. Did your club receive any grants from the government or a charitable organisation (insert recall period)? **(do not read responses)** (Kelly, 2012, modified)

- a) Yes
- b) No **(go to Q15)**
- c) Don't know **(go to Q15)**
- d) Refused to answer **(go to Q15)**

13. And which grant was this/were these? How much funding did your club receive? **(Record the name of the grant and the sum received from each grant)** (Kelly, 2012, modified)

- i. _____
- ii. _____
- iii. _____
- iv. _____
- v. Don't know (put X here)
- vi. Refused to answer (put X here)

14. And what was this grant/were these grants for? Anything else? (Kelly, 2012)
(do not read responses; select all those that apply)

- ☐ General running/operating costs
- ☐ Salaries
- ☐ Equipment
- ☐ Uniforms
- ☐ Facility improvements or rental
- ☐ Other? (specify): [open field]
- ☐ Don't know
- ☐ Refused to answer

15. (Insert recall period), how many of your participants aged 17 and under were supported by individual grants (e.g., Jumpstart, KidSports, Hockey Canada Assist Fund)? Please give us an exact number if you can.

[open field]

This number is:

- a) Exact
- b) An estimate

16. Other than grants, did your club receive any funding (insert recall period) from regional, provincial, or national sporting organizations that your club is affiliated with? **(do not read responses)** (Kelly, 2012)
- Yes
 - No **(go to Q19)**
 - Don't know **(go to Q19)**
 - Refused to answer **(go to Q19)**
17. And which sporting organization was this? How much funding did your club receive? **(record the name of the sporting association and the sum received from each)** (Kelly, 2012, modified)
- _____
 - _____
 - _____
 - _____
 - Don't know (put X here)
 - Refused to answer (put X here)
18. And what were this/these grants for? Anything else? (Kelly, 2012)
(do not read responses; select all those that apply)
- ☐ General running or operating costs
 - ☐ Salaries
 - ☐ Equipment
 - ☐ Uniforms
 - ☐ Facility improvements or rental
 - ☐ Other? (specify): [open field]
 - ☐ Don't know
 - ☐ Refuse to answer
19. (Insert recall period), did your **club or any club team** do any fundraising? By fundraising, I mean things like raffles, selling chocolate or other foods, organizing social events or hosting clinics to raise money for the club or teams. **(do not read responses)** (Kelly, 2012, modified)
- Yes, both the club and teams
 - Yes, only teams **(go to Q21)**
 - Yes, only the club
 - No, neither the club or teams **(go to Q21)**
 - Don't know/refuse **(go to Q21)**
20. And which of the following fundraising activities did your **club** do during (insert recall period)? **(exclude fundraisers organized by teams)** (Kelly, 2012, modified) Did you sell any food or beverages? What about ...**(list following activities)**

	Yes	No	Don't know	Refused to respond
Selling food or beverages? (If yes – what food or beverages? Specify in the comment box)				
Hosting clinics				
Hosting tournaments or meets				
Organizing trivia, movie or social nights				
Receiving profits from canteens				
Charging a fundraising fee as part of registration				
Selling team merchandise				

Organizing raffles (If yes – what were the raffle prizes? Specify in the comment box)				
Other fundraising activities (<i>Specify in the comment box</i>)				

21. (Insert recall period), did your **club or any club team or program** receive any form of sponsorship, from either local businesses, larger companies, city councillors, industry associations, or other types of sponsors? (*Note: this does not include sponsorship from sporting associations or grants*) (Kelly, 2012, modified) (**do not read responses**)

- a) Yes
- b) No (**go to Q39**)
- c) Don't know (**go to Q39**)
- d) Refused to answer (**go to Q39**)

22. Do individual teams or programs seek out their own sponsors? (**do not read responses**)

- a) Yes
- b) No (**go to Q24**)
- c) Don't know (**go to Q24**)
- d) Refused to answer (**go to Q24**)

Comment (specify any relevant information provided): [open field]

23. If asked to do so, could you provide the name of sponsors secured by individual teams or programs? (**do not read responses**)

- a) Yes, can provide the names of all these sponsors
- b) Yes, but can only provide the names of some of these sponsors
- c) No
- d) Don't know
- e) Refuse to answer

Comment (specify any relevant information provided): [open field]

24. How many sponsors did **your club and club teams (or programs)** have (insert recall period)? Please provide the exact number. [open field]

25. How many **food-related sponsors** did **your club and club teams (or programs)** have (insert recall period)? *Examples of food-related sponsors include local or chain restaurants, food and beverage manufacturers or brands, bakeries, delis, grocery stores, convenience stores, and food producers and their industry associations.* [open field]

26. (**Do not read**) Number of **other sponsors** (i.e., not food-related) that sponsored the club or club teams or programs (calculate by subtracting the total number of sponsors by the number of food related sponsors): [open field]

27. What is the name of each **food-related sponsor**?

Food-related Sponsor 1: [open field]

Food-related Sponsor 2: [open field]

Food-related Sponsor 3: [open field]

Food-related Sponsor 4: [open field]

Food-related Sponsor 5: [open field]

(...)

28. What are the names of the **other sponsors** (i.e., those that are not food-related) that sponsored **your club and club teams or programs** (insert recall period)?

Other Sponsor 1: [open field]
 Other Sponsor 2: [open field]
 Other Sponsor 3: [open field]
 Other Sponsor 4: [open field]
 Other Sponsor 5: [open field]
 (...)

29. And can you tell me if (insert name of sponsor 1) was a major or a minor sponsor of your club? By major sponsor, we mean a sponsor that provided \$1,500 or more in direct funding/cash or in-kind donations to your club or individual teams or programs. And what about? **(list off all sponsors)** (Kelly, 2012, modified)

	Major	Minor	Don't know (do not read)	Refused to respond (do not read)
Sponsor 1				
Sponsor 2				
Sponsor 3				
Sponsor 4				
Sponsor 5				
Sponsor 6				
(...)				

[Programming note: List both food-related and non-food-related sponsors]

30. Were any of your club, program or team sponsorship agreements established by a sporting organization that your club is affiliated with? (Kelly, 2012, modified) **(do not read responses)**

- a) Yes, some sponsorship agreements were established by an affiliated sporting body or association
 - i. Specify sponsors and sporting body: [open field]
- b) No
- c) Don't know
- d) Refused to answer

31. Collectively, how much direct funding did your **club and club teams or programs** receive from sponsors (insert recall period)? Please provide an exact amount if you can. **(do not read responses)**

- a) Did not received any direct funding
- b) Don't know
- c) Refused to answer
- d) Specify exact amount: (open field)

If individual teams seek out their own sponsors (yes to Q22): Does this amount include **all** the sponsorship funding secured by individual teams or programs? **(do not read responses)**

- a) Yes, includes all the funding secured by teams/programs
- b) No, includes some of the funding secured by teams/programs
- c) No, does not any include any of the funding secured by teams/programs

32. (If direct funding received): What proportion of your club's revenue was direct funding provided by sponsors? **(do not read responses; record exact response in comment box and select appropriate response category after)** (Kelly, 2012, modified)

- a) None
- b) >0-5%
- c) >5-10%
- d) >10-15%
- e) >15%-25%
- f) >25-50%
- g) >50-75%
- h) >75-100%
- i) Don't know/Refused

Specify exact response: [champ libre]

33. For each **food-related sponsor** that supported your club, I'm now going to ask you what you received from each sponsor and what benefits they received in return.

To start, what did your club or club teams or programs receive from (insert food related sponsor 1)? **(do not read responses; once they answer, probe all benefits listed below that was not mentioned; for example "Did they provide direct funding?" "What about benefit X, Y and Z?")**

***NOTE** - If the sponsor provided money that was used to purchase uniforms, equipment, or to pay for other expenses, please respond "yes" for direct funding and "no" to other benefits acquired using these funds.*

	Yes	No	Don't know	Refuse to answer
Direct funding (PROBE – how much funding did they provide? What was this funding used for?)				
Equipment				
Uniforms				
Coupons				
Free or discounted food for players/athletes				
Free or discounted food for spectators				
Organized free events (e.g., tournaments, team parties)				
Anything else?/Other benefit(s), specify below				

(Kelly, 2012, modified)

Describe the other benefits they received: [open field]

34. **How much funding did they provide?**

No funding provided

Don't know

Refused to answer

Other, specify amount: [open field]

35. What was this funding used for? Probe - Anything else? [open field]

36. If they made an in-kind donation (e.g., equipment, uniforms, food, other): **Approximately, what was the approximate monetary value of their in-kind donation(s)?**

Don't know

Refuse to answer

Other, specify amount: [open field]

37. And what benefits did (food-related sponsor 1) receive for sponsoring your club or a club team/program?

(do not read responses; once they answer, probe the age group targeted/exposed where relevant, also probe benefits listed below that were not mentioned; for example “Did they have their name or logo on equipment, sporting awards or the club/team website or social media pages?”; “Did they have ...)

Probe before proceeding to next sponsor: Was the sponsor advertised by any other means?

If they provide additional details about a given benefit – add this information in the comment box

	Yes	No	Don't know	Refused to answer
Had their name or logo displayed on uniforms (e.g., jerseys, socks, shorts, swim cap)				
Uniforms of children aged 12 and under				
Uniforms of children aged 13 to 17				
Had their name or logo displayed on equipment (e.g., balls, pucks, bases, flags, nets, diving block)				
Equipment for children aged 12 and under				
Equipment for children aged 13 to 17				
Had their name or logo displayed on sporting awards given to players				
Sporting awards for children aged 12 and under				
Sporting awards for children aged 13 to 17				
Had their name, logo or ads displayed on signs at games, practices, competitions and/or tournaments				
Had their name, logo or ads displayed on the website or social media page of the sport club or sports teams				
Had the naming rights for some teams				
For teams of children aged 12 and under				
For teams of children aged 13 to 17				
Had the naming rights for an event (e.g., tournament)				
An event attended by children aged 12 and under				
An event attended by children aged 13 to 17				
The club sold or used the sponsor's product				
Don't know				
Refuse to answer				
Other (specify below)				

(Kelly, 2012, modified)

Describe the other benefits this sponsor received, including the other ways they were advertised:
[open field]

38. *If applicable:* Did any food-related sponsors support your adapted sports programs for children or adolescents with disabilities?

- a) Yes (**Probe** – What sponsor was this? *Specify sponsor in comment box*)
- b) No
- c) Don't know
- d) Refused to answer

Comment: (open field)

39. Does your club currently have or plan to adopt, a written policy on sponsorship? (**do not read responses**) (Kelly, 2012)

- a) Yes, currently have one
- b) No, but planning on having one (Go to Q42)
- c) No, and no plans for having one (Go to Q42)
- d) Don't know/refuse to answer (Go to Q42)

40. *If they have a policy:* Does this policy have rules regarding the type of companies that can sponsor your club or its child and adolescent sports teams or programs? (**do not read responses**)

- a) No
- b) Don't know
- c) Refuse to answer
- d) Yes (**Probe: What companies are not permitted from sponsoring the club or child and youth sports teams/programs?**)

If yes, specify: (open field)

41. *If they have a policy:* Does this policy include any rules about the promotional or sponsorship activities that are permitted? (**do not read responses**)

- a) No
- b) Don't know
- c) Refuse to answer
- d) Yes (**Probe: What promotional or sponsorship activities are not permitted?**)

If yes, specify: (open field)

42. Does your club currently have or plan to adopt a written policy on fundraising? (Kelly, 2012)

- a) Yes, currently have one
- b) No, but planning on having one (**go to Q45**)
- c) No, and no plans for having one (**go to Q45**)
- d) Don't know/refuse to answer (**go to Q45**)

43. *If they have a policy:* Does this policy include rules about what fundraising activities are permitted? (**do not read responses**)

- a) No
- b) Don't know
- c) Refused to answer
- d) Yes (**Probe: What activities are not permitted? Any others?**)

If yes, specify: (open field)

44. *If they have a policy:* Does this policy include any rules about what products can be sold for fundraising? **(do not read responses)**
- a) No
 - b) Don't know
 - c) Refuse to answer
 - d) Yes **(Probe: What products cannot be sold for fundraising? Any restrictions on the sale of food and beverages?)**
If yes, specify: (open field)

45. **If they have a sponsorship or fundraising policy:** Would it be possible to get a copy of your club's written policies, for any of the areas that we've spoken about? (Kelly, 2012)

If yes: Thanks for that. Would you be willing to send us that information by email? Alternatively, I can send you a stamped and addressed envelope so that you can send me a copy of those policy documents. (Kelly, 2012, modified) **(Select method of communication)**

- a. By email - note their email address in written notes
- b. By mail

If no: Ok, no problem.

46. To help us estimate the size of the sports clubs we have surveyed, can you please tell me what your club's annual revenue was (insert recall period)? [open field] (Kelly, 2012, modified)

If they can't or are unwilling to provide a specific amount: Was your club's revenue.... (Kelly, 2012, modified) **(read responses)**

- a) Less than \$10,000
- b) \$10,000 – \$49,000
- c) \$50,000 - \$99,000
- d) \$100,000 - \$249,000
- e) \$250,000 - \$499,000
- f) \$500,000 - \$1,000,000
- g) More than \$1,000,000
- h) Don't know **(do not read)**
- i) Refused **(do not read)**

47. **Quebec only:** Are you aware of any laws or rules in Quebec pertaining to the sponsorship of children's activities including sports?
- a) Yes
 - b) No (Go to Q50)
 - c) Not applicable (clubs in Ontario) (Go to Q50)

48. **Quebec only:** What are these law or rules? (open field)

49. **Quebec only:** What do you think of these rules? **(Probe – Anything else?)** (open field)

PART C – IMPACT OF COVID-19

The following questions are on the impact of COVID-19 on your club's financial situation and its receipt of sponsorship.

50. How, if at all, was your sports club affected financially by the COVID-19 pandemic? Was it... **(read responses below, ask follow-up question if they respond very or somewhat affected).**
- a) Very affected
 - b) Somewhat affected
 - c) Not at all affected
 - d) Don't know **(do not read)**
 - e) Refuse to answer **(do not read)**

If very/somewhat affected: In what way was your club financially affected by the pandemic? Anything else? [open field]

51. Did your sports club have to increase registration fees for children or adolescents because of the COVID-19 pandemic? **(do not read responses)**
- a) Yes **(Probe: By how much? Specify in comment box)**
 - b) No
 - c) Don't know
 - d) Refuse to answer
- Comment: [open field]

52. Did the COVID-19 pandemic affect your club's ability to find sponsors for your child and adolescent sports teams or programs? **(do not read responses)**
- a) Yes **(Probe: How so? Specify in comment box)**
 - b) No
 - c) Not applicable (The club doesn't have or seek out sponsors.)
 - d) Don't know
 - e) Refuse to answer
- Comment: [open field]

53. Did the COVID-19 pandemic force your club, teams, or programs to seek out more sponsors? **(do not read responses)**
- a) Yes
 - b) No
 - c) Not applicable (The club doesn't have or seek out sponsors.)
 - d) Don't know
 - e) Refuse to answer
- Comment: [open field]

54. Did the COVID-19 pandemic force your club, teams, or programs to seek out more food-related sponsors? **(do not read responses)**
- a) Yes
 - b) No
 - c) Not applicable (The club doesn't have or seek out sponsors.)
 - d) Don't know
 - e) Refuse to answer
- Comment: [open field]

PART D – Views regarding food company sponsorship and its restrictions

Now I'd like to ask you questions about your views regarding food company sponsorship.

The federal government recently considered restricting the marketing of unhealthy food and beverages to children in various media and settings like on television, online and in schools. As part of these restrictions, the government considered limiting the sponsorship of children's sports by companies that make and sell unhealthy foods over concerns that this activity encourages poor eating habits among young people.

Given that sports clubs could be affected by the restriction of food company sponsorship, we think it's important to know what you think about this topic. There are no right or wrong answers. Just respond as honestly as you can.

55. How concerned, if at all, are **you** about the sponsorship of children and adolescents' sporting activities by companies that make and sell unhealthy food and beverages like fast food, soft drink, chips, candy and chocolate? (Kelly 2012, modified; Donaldson & Nicholson, 2020, modified) Are you....

- a) Very concerned
- b) Slightly concerned
- c) Not at all concerned
- d) Don't know (**do not read**)
- e) Refused to answer (**do not read**)

Comment: [open field]

56. How concerned, if at all, do you think **parents** are about the sponsorship of **children and adolescents' sporting activities** by companies that make and sell unhealthy food and beverages like fast food, soft drink, chips, candy and chocolate? (Kelly, 2012 modified; Donaldson & Nicholson, 2020, modified) Are they....

- a) Very concerned
- b) Slightly concerned
- c) Not at all concerned
- d) Don't know (**do not read**)
- e) Refused to answer (**do not read**)

Comment: [open field]

57. To what extent, if at all, do you think **children aged 12 and under** are influenced by the sponsorship of their **own** sports club or team? By "*influence*", we mean *affect what products they like, ask their parents for, or buy*. (Kelly, 2012, modified) Are children....

- a) Very influenced
- b) Slightly influenced
- c) Not at all influenced
- d) Don't know (**do not read**)
- e) Prefer not to answer (**do not read**)

Comment: [open field]

58. To what extent, if at all, do you think **adolescents aged 13 to 17** are influenced by the sponsorship of their **own** sports club or team? (Kelly, 2012, modified) By “*influence*”, we mean *affect what products they like, ask their parents for, or buy*. Are adolescents....
- a) Very influenced
 - b) Slightly influenced
 - c) Not at all influenced
 - f) Don't know **(do not read)**
 - d) Prefer not to answer **(do not read)**

Comment: [open field]

59. In your opinion, how common or uncommon is it for child and adolescent sports clubs and teams to be sponsored by food companies? Is it...
- a) Very common
 - b) Somewhat common
 - c) Somewhat uncommon
 - d) Very uncommon
 - e) Don't know **(do not read)**
 - f) Refused to answer **(do not read)**

Comment: [open field]

60. In your opinion, how common or uncommon is it for child and adolescent sports clubs and teams to restrict sponsorship from companies that make or sell unhealthy foods or beverages? Is it...
- a) Very common
 - b) Somewhat common
 - c) Somewhat uncommon
 - d) Very uncommon
 - e) Don't know **(do not read)**
 - f) Refused to answer **(do not read)**

Comment: [open field]

61. Has your club ever intentionally attempted to establish sponsors that promote healthy products, such as healthy food or beverages, sporting companies or anything else....? (Kelly, 2012, modified)
(do not read responses)
- a) Yes
 - b) No **(go to Q63)**
 - c) Not applicable **(go to Q63)**
 - d) Don't know **(go to Q63)**
 - e) Refused to answer **(go to Q63)**

62. And what did your club do? (**Probe – Anything else?**) (Kelly, 2012, modified)
-
-

63. How appropriate or inappropriate do you think it is for **(read first company type listed)** to sponsor the sports clubs or teams of children and adolescents? Is it ... **(read response options)**. What about **(go through list of company types)** (Kelly, 2012, modified)
[Programming note- randomize order]

	Very appropriate	Somewhat appropriate	Somewhat inappropriate	Very inappropriate	Don't know / No opinion	Refused to answer (do not read)
a) Sporting goods companies						
b) Snack food companies, like for donuts, chips etc.						
c) Car companies						
d) Companies that make sugary breakfast cereal						
e) Fast food restaurants						
f) Alcohol companies						
g) Telephone companies						
h) Soft drink companies						
i) Grocery stores						
j) Chocolate and candy companies						
k) Sports drink companies (like Gatorade)						
l) Banks						
m) Video game companies						
n) Bakeries						
o) Convenience stores						
p) Energy drink companies (like Red Bull)						

64. How likely or unlikely would you be to support a policy which restricted unhealthy **food and beverage** companies from sponsoring the sporting activities of **children aged 12 and under**? (Kelly, 2012, modified) Would you be...

- a) Very likely to support
- b) Likely to support
- c) Unlikely to support
- d) Very unlikely to support
- e) Don't know/undecided **(do not read)**
- f) Refused to answer **(do not read)**

Comment: [open field]

65. How likely or unlikely would you be to support a policy which restricted unhealthy **food and beverage** companies from sponsoring the sporting activities of **adolescents aged 13 to 17**? (Kelly, 2012, modified) Would you be...

- a) Very likely to support
- b) Likely to support
- c) Unlikely to support **(go to Q68 if Unlikely/Very unlikely/Don't know/Refused for Q63)**
- d) Very unlikely to support **(go to Q68 if Unlikely/Very unlikely/Don't know/Refused for Q63)**

- e) Don't know/undecided (**do not read**; go to Q68 if Unlikely/Very unlikely/Don't know/Refused for Q63)
 f) Refused to answer (**do not read**; go to Q68 if Unlikely/Very unlikely/Don't know/Refused for Q63)
 Comment: [open field]

66. [If question 64 or 65 was answered “very likely to support” or “likely to support”]: Would you still support the restriction of **unhealthy food and beverage** sponsorship if it meant that your sports club had to increase its fees for children and/or adolescents? (Kelly 2012, modified)

- a) No (**go to Q68**)
 b) Yes
 c) Don't know/undecided (**go to Q68**)
 d) Refused to answer (**go to Q68**)

Comment: [open field]

67. How much would you be willing to increase fees if the sponsorship of **child and/or adolescent** sports clubs and teams by companies that produce and sell unhealthy food and beverages was restricted?

[open field]

- a) Don't know (**do not read**)
 b) Refused to answer (**do not read**)

Comment: [open field]

68. And who do you think should introduce this policy to restrict unhealthy food and beverage companies from sponsoring the sports clubs and teams of **children and/or adolescents**? Should it be... (Kelly 2012, modified)

- a) Sports clubs
 b) Provincial sport associations
 c) Government (Municipal, Provincial, Federal)
 d) Other, specify: _____
 e) Don't know (**do not read**)
 f) Refused to answer (**do not read**)

Comment: [open field]

69. Other than completely banning unhealthy food and beverage companies from sponsoring the sports clubs and teams of children and adolescents, which of the following restrictions would you support. Would you support, yes or no, prohibiting the use of their name or logo on uniforms? (**read response choices**). What about prohibiting ... (**go through list**) (Kelly 2012, modified)

	Yes	No	Don't know/ undecided	Refused to answer
Prohibiting the name or logo of these companies on uniforms?				
Prohibiting the name or logo of these companies on sporting equipment?				
Prohibiting the name of these companies from being associated with the name of teams, clubs or sporting events?				
Prohibiting the name or logo of these companies from being displayed on certificates, trophies or other prizes?				
Prohibiting these companies from providing coupons for their products?				

Prohibiting free samples?				
Prohibiting the name, logo, or advertisements of these companies from being displayed on signs at practices, games and tournaments?				
Prohibiting these companies from advertising their sponsorship of children's sports in various media (like on television or online)?				

Comment: [open field]

70. In your opinion, how do you think sports for children and adolescents would be affected if **unhealthy food and beverage** sponsorship of their clubs, programs, or teams was restricted? (**Probe – Anything else?**) (Kelly, 2012)

71. If companies making and selling **unhealthy food and beverages** could no longer sponsor the sporting activities of children and adolescents, how likely or unlikely would your club, programs or teams find alternative sponsors? Would it be...

- a) Very likely
- b) Likely
- c) Unlikely
- d) Very unlikely
- e) Not applicable (Your club doesn't rely on or seek out sponsorship)
- f) Don't know / unsure (**do not read**)
- g) Refused to answer (**do not read**)

Comment: [open field]

72. If a company producing or selling unhealthy food and beverages offered to sponsor your club and its teams or programs for children and adolescents, what would make it difficult for your club to reject the offer? (Donaldson et al. 2018, modified)

Probe – Would anything else make it difficult?

73. Is there anything else you'd like to say about food company sponsorship of children's sports?

Cited and/or consulted literature:

Batty RJ, Gee S. Fast food, fizz and funding: Balancing the scales of regional sport organisation sponsorship. *Sport Management Review* 2019; 22:167-179.

Donaldson A, Reimers JL, Brophy KT, Nicholson M. Barriers to rejecting food company sponsorship in sport – a formative evaluation using concept mapping. *Public Health* 2019; 166:1-9.

Donaldson A, Nicholson M. Attitudes of sports organisation members to junk food sponsorship. *Public Health* 2020; 185:212-217.

Kelly B (2012). Food and beverage company sponsorship of children's sport: Publicity or philanthropy? (PhD thesis). University of Sydney.

Kelly B, Baur LA, Bauman AE, King L, Chapman K, Smith BJ. Restricting unhealthy food sponsorship: Attitudes of the sporting community. *Health Policy* 2012;104:288-295.

Pettigrew A, Pescud N, Rosenberg M, Ferguson R, Houghton A. Public support for restrictions on fast food company sponsorship of community events. *Asia Pacific Journal of Clinical Nutrition* 2012;21(4):609-617.

Appendix IV: Online survey administered to sports team representatives for Study 2

Before starting the survey, please input the Access Code sent to you by email*: (open field)

**If the respondent clicks 'next' without providing a valid answer:* To continue with the survey, you must enter the X-number access code that was sent to you by email.

If you are having difficulty accessing the survey, you may contact Elise Pauzé by email at [REDACTED]

Page Break

Study title: The funding and sponsorship of child and youth sports in Ontario and Quebec

You are invited to participate in this 10-minute online survey. This research is conducted by Professor Monique Potvin Kent of the School of Epidemiology and Public Health at the University of Ottawa and is funded by the Canadian Institutes for Health Research.

The purpose of this study is to understand how much child and adolescent sports teams and programs in Ontario and Quebec depended on fundraising and sponsorship in 2021-22 and to assess what the sporting community thinks of restricting food company sponsorship. If your team or program received any sponsorship, you will be asked to specify the names of all your sponsors and the benefits you received from food-related sponsors, including the amount of funding they provided. As such, you will need to have this information on hand to complete the survey. **Even if your team or program does not do any fundraising, have any sponsors, or have detailed records of sponsorship benefits, it is still relevant for you to participate.** Ultimately, this research may help inform health promotion policies in Canada.

This survey is being conducted independently from the sports club you are affiliated with, and your participation is voluntary. You can decline to respond to any question or stop participating in the survey at any time. There are no consequences for doing so. However, if you'd like us to delete the data collected up until the time of your withdrawal, you must contact the lead researcher. No one outside our research team, including your sports club and its board members, will know whether you decided to complete the survey. We will not ask you to provide your name, address or telephone number and information about your identity will never be shared. We are however collecting your IP address temporarily to avoid duplicate responses in our dataset.

If you do not complete the survey in one sitting, your responses will be saved, and you can continue from where you left off by using the same device and internet browser. If possible, we suggest you complete the survey using a computer or tablet.

As this survey is being done online, your responses may be intercepted by a third party (e.g., hackers). Your participation however does not expose you to any risks greater than those you encounter in daily life. Once we finish our data collection, anonymized copies of the data will be protected with a password and stored indefinitely on secure university cloud storage, servers, and computers. Anonymized and password-protected data files will also be temporarily stored on the personal computers of research team members.

This study has been reviewed and received ethics clearance from the University of Ottawa's Research Ethics Board (H-09-21-7089). If you have any questions regarding the ethical conduct of this study, you can contact the Protocol Officer for Ethics in Research at the University of Ottawa by phone at (613) 562-5387 or by email at ethics@uottawa.ca.

If you have any questions about the study or if you wish to know the results, you may contact the Principal Researcher, Monique Potvin Kent by phone at (613) 562-5800 ext. 7447 or by email at monique.potvinkent@uottawa.ca.

Do you agree to participate in this online survey?

Yes

No

**If the respondent clicks 'next' without providing an answer:* This question requires an answer.

Page Break

If the respondent answers 'No' on the previous page:

If you meant to agree to participate in this survey, please go back to the previous page and consent to participate by selecting 'Yes' and then clicking 'Next'.

If you don't want to participate, no problem! Best of luck with your current or upcoming sporting season! You may close your browser.

If you go to the next page without consenting to participate, you will be disqualified from participating in the study.

Page Break

If the respondent goes to the next page without consenting to participate [Disqualification page]:

You are not eligible to participate in this survey.

Thanks so much for your time and interest. Best of luck with your current or upcoming sporting season!

You may close your browser.

Page Break

1. Before getting started, please tell us what device you are using to complete the survey.

- a) Computer
- b) Tablet
- c) Smartphone
- d) Prefer not to answer

**If the respondent clicks 'next' without providing an answer:* This question requires an answer. If you would like to skip this question, please select 'Prefer not to answer'.

Page Break

The following questions will ask about the sports team(s) or program you worked or volunteered with and their fundraising activities and sponsors (insert recall period). Please respond to these questions based on your affiliation with the sports club that was specified in the email invitation that was sent to you.

Part A: Sports program or team characteristics

2. (Insert recall period), what sport did you work or volunteer with?
- a) Baseball
 - b) Basketball
 - c) Figure Skating
 - d) Gymnastics
 - e) Hockey
 - f) Soccer
 - g) Swimming
 - h) Volleyball
 - i) Other [programming: prompt to correct response or terminate]
 - j) Prefer not to answer

**If the respondent clicks 'next' without providing an answer:* This question requires an answer. If you would like to skip this question, please select 'Prefer not to answer'.

Page Break

If the respondent answers 'Other' on the previous page: You reported that you work or volunteer with a sport other than baseball, basketball, figure skating, gymnastics, hockey, soccer, swimming, and volleyball.

If you meant to select a one of these eight sports, please go back to the previous page, and select the correct response and then click 'Next'.

If you exclusively work or volunteer with another sport, you are not eligible to participate in this survey. Thanks so much for your time and interest. You may close your browser.

Page Break

If the respondent goes to the next page without correcting their answer [disqualification page]:

You are not eligible to participate in this survey.

Thanks so much for your time and interest. Best of luck with your current or upcoming sporting season!

You may close your browser.

Page Break

3. *If a team sport is selected in Q2:* Did you work or volunteer with a recreational or competitive sports team?
- a) Recreational team(s) (e.g., house league)
 - b) Competitive team(s) (any level)
 - c) Both recreational and competitive teams
 - d) Other or unsure, specify: [open field]
 - e) Prefer not to answer

**If the respondent clicks 'next' without providing an answer:* This question requires an answer. If you would like to skip this question, please select 'Prefer not to answer'.

If figure skating, gymnastics, or swimming is selected in Q2: Did you work for or volunteer with a recreational sports program or a competitive team?

- a) Recreational program (including initiation, training, or pre-competitive programs or teams)
- b) Competitive team (any level)
- c) Both a recreational program and competitive team
- d) Other or unsure, please specify: [open field]
- e) Prefer not to answer

**If the respondent clicks 'next' without providing an answer:* This question requires an answer. If you would like to skip this question, please select 'Prefer not to answer'.

Page Break

4. Which of the following describes your role with the sports team(s) or program you worked or volunteered with? Select all those that apply.
- a) Coach
 - b) Team or program manager
 - c) Team or program treasurer
 - d) Other, specify: [open field]
 - e) Prefer not to answer

**If the respondent clicks 'next' without providing an answer:* This question requires an answer. If you would like to skip this question, please select 'Prefer not to answer'.

Page Break

5. (Insert recall period), how many teams did you work or volunteer with?
- a) 1 team
 - b) 2 teams
 - c) 3 or more teams
 - d) Not applicable
 - e) Prefer not to answer

**If the respondent clicks 'next' without providing an answer:* This question requires an answer. If you would like to skip this question, please select 'Prefer not to answer'.

Page Break

6. How old were the players or athletes that you worked or volunteered with? Select all those that apply.
- ☐ 5 years
 - ☐ 6 years
 - ☐ 7 years
 - ☐ 8 years
 - ☐ 9 years
 - ☐ 10 years
 - ☐ 11 years
 - ☐ 12 years
 - ☐ 13 years
 - ☐ 14 years
 - ☐ 15 years
 - ☐ 16 years
 - ☐ 17 years
 - ☐ 18 years and over [programming: prompt to correct response or terminate]
 - ☐ Prefer not to answer

**If the respondent clicks 'next' without providing an answer:* This question requires an answer. If you would like to skip this question, please select 'Prefer not to answer'.

Page Break

If they selected 18 years and over exclusively:

You reported that you only work or volunteer with players or athletes aged 18 years and over.

If you meant to select another age group, please go back to the previous page to correct your response and click 'next'.

If you indeed work or volunteer with players or athletes aged 18 years and over exclusively, you are unfortunately not eligible to participate in this survey. Thanks so much for your time and interest! You may close your browser.

Page Break

If the respondent goes to the next page without correcting their answer [disqualification page]:

You are not eligible to participate in this survey.

Thanks so much for your time and interest. Best of luck with your current or upcoming sporting season!

You may close your browser.

Page Break

7. What is the sex of the players or athletes that you worked or volunteered with?
- a) Male
 - b) Female
 - c) Male and Female
 - d) Prefer not to answer

**If the respondent clicks 'next' without providing an answer:* This question requires an answer. If you would like to skip this question, please select 'Prefer not to answer'.

8. In what province was your sports club, program or team(s) located?
- a) Ontario
 - b) Quebec
 - c) Other province [programming: prompt to correct response or terminate]
 - d) Prefer not to answer

**If the respondent clicks 'next' without providing an answer:* This question requires an answer. If you would like to skip this question, please select 'Prefer not to answer'.

Page Break

If they selected 'Other province':

You indicated that you work or volunteer with a sports club located in a province other than Ontario and Quebec.

If you meant to select Ontario or Quebec, please go back to the previous page, correct your response, then click 'next'.

If you indeed work or volunteer with a sports club in a province other than Ontario and Quebec, you are unfortunately not eligible to participate in this survey. Thanks so much for your time and interest! You may close your browser.

Page Break

If the respondent goes to the next page without correcting their answer [disqualification page]:

You are not eligible to participate in this survey.

Thanks so much for your time and interest. Best of luck with your current or upcoming sporting season!

You may close your browser.

Page Break

Part B: Sponsorship

9. (Insert recall period), did your team(s) or program have any sponsors?

Sponsors may include local businesses, larger companies, city councillors, non-profits, or any other type of sponsor.

- a) Yes
- b) No [skip to Q22]
- c) Don't know [skip to Q22]
- d) Not applicable [skip to Q22]
- e) Prefer not to answer [skip to Q22]

**If the respondent clicks 'next' without providing an answer:* This question requires an answer. If you would like to skip this question, please select 'Prefer not to answer'.

Page Break

10. How many **food-related sponsors** did your team(s) or program have (insert recall period)? [drop down menu or multiple choice]

Examples of food-related sponsors include restaurants, food and beverage manufacturers or brands, bakeries, delis, grocery stores, convenience stores, food producers and their industry associations.

**If the respondent clicks 'next' without providing an answer:* This question requires an answer. If you would like to skip this question, please select 'Prefer not to answer'.

11. Aside from food-related sponsors, how many **other sponsors** did your team(s) or program have (insert recall period)? [drop down menu or multiple choice]

These sponsors may include local businesses, larger companies, city councillors, non-profits or other sponsors that are not food related.

**If the respondent clicks 'next' without providing an answer:* This question requires an answer. If you would like to skip this question, please select 'Prefer not to answer'.

Page Break

As a reminder the following questions are about your team(s)' or program's sponsors (insert recall period).

12. What were the names of your teams' or program's **food-related sponsors**? Please specify the name of each sponsor.

As a reminder, examples of food-related sponsors include restaurants, food and beverage manufacturers or brands, bakeries, delis, grocery stores, convenience stores, food producers and their industry associations.

Food-related Sponsor 1: [open field]

Food-related Sponsor 2: [open field]

Food-related Sponsor 3: [open field]

Food-related Sponsor 4: [open field]
Food-related Sponsor 5: [open field]

**If the respondent clicks 'next' without providing an answer:* This question requires an answer. If you do not wish to provide the name of sponsors, please write 'Food sponsor 1', 'Food sponsor 2', 'Food sponsor 3', etc.

[Programming note: The number of response boxes to be determined by the number of sponsors reported in Q10]

Page Break

13. What were the names of your teams' or program's **other sponsors**?

These sponsors may include local businesses, larger companies, city councillors, non-profits or other sponsors that are not food related.

Other Sponsor 1: [open field]
Other Sponsor 2: [open field]
Other Sponsor 3: [open field]
Other Sponsor 4: [open field]
Other Sponsor 5: [open field]

**If the respondent clicks 'next' without providing an answer:* This question requires an answer. If you do not wish to provide the name of sponsors, please write 'Other sponsor 1', 'Other sponsor 2', 'Other sponsor 3', etc.

[Programming note: The number of response boxes to be determined by the number of sponsors reported in Q11.]

Page Break

14. Did your team(s) or program receive direct funding or money from any of your sponsors (insert recall period)?
- a) Yes
 - b) No [skip to Q16]
 - c) Don't know [skip to Q16]
 - d) Prefer not to answer [skip to Q16]

**If the respondent clicks 'next' without providing an answer:* This question requires an answer. If you would like to skip this question, please select 'Prefer not to answer'.

Page Break

15. *If yes to Q12:* Collectively, how much money did your team(s) or program receive from **all its sponsors** (insert recall period)?

Please provide the exact amount (in dollars) if you can. Include funding received from both food-related and non-food related sponsors.

[open field]

[Programming note: Do not require a response to proceed to the next page]

Page Break

16. Please specify whether each **food-related sponsor** was a major or minor sponsor. (Kelly, 2012, modified)

By major sponsor, we mean a sponsor that provided \$1,500 or more in direct funding/money or in-kind donations to your team(s) or program.

Sponsor 1	a. Major	b. Minor	c. Don't know	d. Prefer not to answer
Sponsor 2	a. Major	b. Minor	c. Don't know	d. Prefer not to answer
Sponsor 3	a. Major	b. Minor	c. Don't know	d. Prefer not to answer
Sponsor 4	a. Major	b. Minor	c. Don't know	d. Prefer not to answer
Sponsor 5	a. Major	b. Minor	c. Don't know	d. Prefer not to answer
Sponsor 6	a. Major	b. Minor	c. Don't know	d. Prefer not to answer
Sponsor 7	a. Major	b. Minor	c. Don't know	d. Prefer not to answer
Sponsor 8	a. Major	b. Minor	c. Don't know	d. Prefer not to answer
Sponsor 9	a. Major	b. Minor	c. Don't know	d. Prefer not to answer
Sponsor 10	a. Major	b. Minor	c. Don't know	d. Prefer not to answer

[Programming note: Do not require a response to proceed to the next page]

17. Please specify whether each **other sponsor** was a major or minor sponsor. (Kelly, 2012, modified)

By major sponsor, we mean a sponsor that provided \$1,500 or more in direct funding/money or in-kind donations to your team(s) or program.

Sponsor 1	a. Major	b. Minor	c. Don't know	d. Prefer not to answer
Sponsor 2	a. Major	b. Minor	c. Don't know	d. Prefer not to answer
Sponsor 3	a. Major	b. Minor	c. Don't know	d. Prefer not to answer
Sponsor 4	a. Major	b. Minor	c. Don't know	d. Prefer not to answer
Sponsor 5	a. Major	b. Minor	c. Don't know	d. Prefer not to answer
Sponsor 6	a. Major	b. Minor	c. Don't know	d. Prefer not to answer
Sponsor 7	a. Major	b. Minor	c. Don't know	d. Prefer not to answer
Sponsor 8	a. Major	b. Minor	c. Don't know	d. Prefer not to answer
Sponsor 9	a. Major	b. Minor	c. Don't know	d. Prefer not to answer
Sponsor 10	a. Major	b. Minor	c. Don't know	d. Prefer not to answer

[Programming note: Do not require a response to proceed to the next page]

Page Break

18. Did your sports team(s) or program receive the following benefits from (insert name food-related sponsor 1)?

If the sponsor provided money that was used to purchase uniforms, equipment, or to pay for other expenses, please respond “yes” for direct funding and “no” to other benefits acquired using these funds.

	Yes	No	Don't know	Prefer not to answer
Direct funding/money				
Equipment				
Uniforms				
Coupons				
Free or discounted food for players/athletes				
Free or discounted food for spectators				
Organized an event (e.g., tournament, social event)				
Other benefit(s), specify below				

(Kelly, 2012 modified)

Please describe the other benefit(s) that you received: [open field]

[*Programming note*: Do not require a response to proceed to the next page]

Page Break

19. How much direct funding or money did your team receive from (insert name of food-related sponsor 1)? Please provide the exact amount if you can, in dollars. (open field)

[*Programming note*: Do not require a response to proceed to the next page. Only show if the food-related sponsor was reported as providing funding in the previous question.]

Page Break

20. Did (insert name of food-related sponsor 1) receive the following benefits for sponsoring your sports team(s) or program?

	Yes	No	Don't know	Prefer not to answer
Their name or logo was displayed on uniforms				
Their name or logo was displayed on sporting equipment				
Their name or logo was displayed on sporting awards given to players				
Their name, logo or advertisements were displayed on signs at games, practices, competitions and/or tournaments				
Their name, logo or advertisements were displayed on the club or team's website or social media pages				
They had the naming rights for the team				
They had the naming rights for an event (e.g., tournament)				
Other benefit(s) (specify below)				

(Kelly, 2012 modified)

Please describe the other benefit(s) this sponsor received, including the other ways they were advertised: [open field]

[*Programming note:* If more than one food-related sponsor is reported, Q18 and Q19 will be shown in tandem for each sponsor. Do not require a response to proceed to the next page]

Page Break

21. Was the money provided by **food-related sponsors** used for the following expenses?

	Yes	No	Don't know	Prefer not to answer
Buying uniforms				
Buying, repairing, or renting equipment				
Buying food or beverages for practices, games, competitions, meets or tournaments				
Covering expenses related to tournaments or competitions (e.g., travel, accommodations, registration)				
Covering expenses related to social or team-bonding events (e.g., post-game/competition events, end-of-season party)				
Subsidizing registration fees for low-income club members				
Other expense(s) (specify below)				

Please describe the other expenses that were covered using money provided by **food-related sponsors**:
[open field]

[*Programming note:* Do not require a response to proceed to the next page. Only show if 1) the participant reports one or more food related sponsor AND 2) at least one of these sponsors is reported as providing funding]

Page Break

Part C: Other fundraising

22. Aside from sponsorship, did your team(s) or program do any other fundraising (insert recall period)?
(Kelly, 2012, modified)

- a) Yes
- b) No [skip to Q25]
- c) Don't know [skip to Q25]
- d) Not applicable [skip to Q25]
- e) Prefer not to answer [skip to Q25]

**If the respondent clicks 'next' without providing an answer:* This question requires an answer. If you would like to skip this question, please select 'Prefer not to answer'.

Page Break

23. *If yes to Q22: Did your team(s) or program do any of the following fundraising activities (insert recall period)?* (Kelly, 2012, modified)

	Yes	No	Don't know	Prefer not to answer
Sold food or beverages				
Sold other products				
Organized raffles				
Other fundraiser(s) (specify below)				

Please describe the other fundraising activities: [open field]

[Programming note: Do not require a response to proceed to the next page]

Page Break

24. *If Yes is selected for “selling food and beverage” in Q23: What food or beverages did you sell to raise money for your sports team(s) or program (insert recall period)?*

If applicable, please specify the brand of the food products that were sold, and the name of the company involved in this fundraising. [open field]

[Programming note: Do not require a response to proceed to the next page]

Page Break

Part D: Views regarding food company sponsorship and its restrictions

The federal government recently considered restricting the marketing of unhealthy food and beverages to children in various media and settings like on television, online and in schools. As part of these restrictions, the government considered limiting the sponsorship of children's sports by companies that make and sell unhealthy food and beverages over concerns that this activity encourages poor eating habits among young people.

25. How concerned, if at all, are **you** about the sponsorship of children and adolescents' sporting activities by companies that make and sell unhealthy food and beverages like fast food, soft drink, chips, candy and chocolate? (Kelly, 2012; Donaldson & Nicholson, 2020, modified)

- f) Not at all concerned
- g) Slightly concerned
- h) Very concerned
- i) Prefer not to answer

**If the respondent clicks 'next' without providing an answer: This question requires an answer. If you would like to skip this question, please select 'Prefer not to answer'.*

Page Break

26. To what extent, if at all, do you think children and adolescents are influenced by the sponsorship of their **own** sports team or club? By “*influence*”, we mean *affect what products they like, ask their parents for, or buy*. (Kelly, 2012, modified)

- a) Not at all influenced
- b) Slightly influenced
- c) Very influenced
- d) Don’t know
- e) Prefer not to answer

**If the respondent clicks ‘next’ without providing an answer:* This question requires an answer. If you would like to skip this question, please select ‘Prefer not to answer’.

Page Break

27. How likely or unlikely would you be to support a policy which restricted **unhealthy food and beverage companies** from sponsoring the sporting activities of **children aged 12 and under**? (Kelly, 2012, modified)

- a) Very likely to support
- b) Likely to support
- c) Neither likely nor unlikely to support
- d) Unlikely to support
- e) Very unlikely to support
- f) Prefer not to answer

Source: Kelly, 2012, modified

**If the respondent clicks ‘next’ without providing an answer:* This question requires an answer. If you would like to skip this question, please select ‘Prefer not to answer’.

Page Break

28. How likely or unlikely would you be to support a policy which restricted **unhealthy food and beverage companies** from sponsoring the sporting activities of **adolescents aged 13 to 17**? (Kelly, 2012, modified)

- a) Very likely
- b) Likely
- c) Neither likely nor unlikely
- d) Unlikely
- e) Very unlikely
- f) Prefer not to answer

**If the respondent clicks ‘next’ without providing an answer:* This question requires an answer. If you would like to skip this question, please select ‘Prefer not to answer’.

Page Break

29. If companies making and selling **unhealthy food and beverages** could no longer sponsor the sporting activities of children and adolescents, how likely or unlikely would your team(s) or program find alternative sponsors?
- a) Very likely
 - b) Likely
 - c) Neither likely nor unlikely
 - d) Unlikely
 - e) Very unlikely
 - f) Not applicable
 - g) Prefer not to answer

Page Break

30. Are you aware of any provincial laws or rules pertaining to the sponsorship of children's activities including sports?
- a) No (go to question 32)
 - b) Yes (go to question 31 if respondent works or volunteers with a sports club in Quebec other go to question 32)
 - c) Prefer not to answer

**If the respondent clicks 'next' without providing an answer:* This question requires an answer. If you would like to skip this question, please select 'Prefer not to answer'.

Page Break

31. *If the respondent works or volunteers with a sports club in Quebec and is aware of provincial rules regarding sponsorship:* What are the laws or rules in Quebec pertaining to the sponsorship of children's activities?
- a) The sponsorship of children's activities and sports teams is prohibited.
 - b) The sponsorship of children's activities and sports teams is permitted but all sponsorship advertising tied to these activities is prohibited.
 - c) The sponsorship of children's activities and sports teams is permitted but some types of sponsorship advertising tied to these activities are prohibited.
 - d) Don't know
 - e) Prefer not to answer

**If the respondent clicks 'next' without providing an answer:* This question requires an answer. If you would like to skip this question, please select 'Prefer not to answer'.

**Programming note:* Show question if 1) participant is from Quebec (Q8) AND 2) participants responds Yes to Q30.

Page Break

32. Is there anything else you would like to say about the sponsorship of child and adolescent sports by food companies or its restriction? [open field]
- [Programming note: Do not require a response to proceed to the next page]

Page Break

Thank you for completing our survey!

This is the end of the survey. Thank you so much for your time!

As a reminder, this study has been reviewed and received ethics clearance from the University of Ottawa's Research Ethics Board (H-09-21-7089). If you have any questions regarding the ethical conduct of this study, you can contact the Protocol Officer for Ethics in Research at the University of Ottawa by phone at (613) 562-5387 or by email at ethics@uottawa.ca.

If you have any questions about the study or if you wish to know the results, you may contact the Principal Researcher, Monique Potvin Kent by phone at (613) 562-5800 ext. 7447 or by email at monique.potvinkent@uottawa.ca.

Cited and/or consulted literature:

Donaldson A, Nicholson M. Attitudes of sports organisation members to junk food sponsorship. *Public Health* 2020; 185:212-217.

Kelly B (2012). Food and beverage company sponsorship of children's sport: Publicity or philanthropy? (PhD thesis). University of Sydney.

Appendix V: Online survey administered to children aged 10-17 years for Study 3

Screening question (Age_Group)

Do you have children aged 10 to 17 years living in your household? Select all that apply.

1. I have one or more children aged 10-12 years.
2. I have one or more children aged 13-17 years.
3. I have no children.

Programming:

If 3 is selected, show the following message “Thank you for your interest. Unfortunately, you are not eligible to participate in this study. Thank you for your time.”

If 1 and 2 are selected, go to the next page.

If 1 or 2 is selected, go the next page if the age group quota has not been met.

*Question will be modified during survey fielding such that only age groups for whom quotas have not been met will be displayed

Page Break

Study Title: Children’s exposure and views of sports-related food advertising

We would like to conduct a survey with **ONE** of your **CHILDREN AGED /10-12/13-17/** years old living in your household. After reading a description of the survey on the next page and answering a few additional questions, we would like your child to complete a survey if they are eligible. Your child can complete the survey now or later when they are available.

Please read the information on the following page and indicate whether you are willing to let your child participate.

Programming: *The age group specified in the text above is based on the response provided to the screening question (Age_Group). If the respondent has children in more than one age group, the age group proposed to parent in the text above will be based on the group with the fewest responses.*

Page Break

Parental Consent

Please read the following information and indicate whether you are willing to let your child participate.

The purpose of this survey is to understand children’s views of sports sponsorship by food and beverage companies. Your child will be asked whether they’ve seen sports-related food advertising and what they think about it. The survey will start by asking you about your level of education and your child’s age, sex, racial identity, and province of residence to make sure our participants represent the child population in Ontario and Quebec. If enough children in the same province, parental education, age, race, and sex group as your child have already participated, your child may not be eligible.

The survey data is being collected by the Survey Research Centre (SRC) at the University of Waterloo, on behalf of Professor Monique Potvin Kent from the University of Ottawa. It will take about 10-12 minutes to complete. If your child is not available right now, they can complete the survey later. To thank you for their participation, you will receive Léger's usual compensation.

Participation in this study is voluntary. Your child can decline to respond to any question by leaving the response blank. We will keep your child's identity confidential. Your child's survey responses will be combined with those of other children making it impossible to identify them from the study results we publish. We will not ask your child to disclose their name, address or telephone number and we will never share any of their personal information. We do not think there are any risks associated with your child's participation in this study.

Although we have implemented measures to protect the data we collect, when information is transmitted over the internet, there is still a risk that your responses and those of your child may be intercepted by a third party (e.g., hackers). The SRC temporarily collects your computer IP address to avoid duplicate responses in the dataset. The survey responses will be stored by the SRC for seven years on a secure server at the University of Waterloo. Anonymized copies of the data will also be stored on the computers of the Principal Researcher and her students. These computers will be password protected.

This study has been reviewed and received ethics clearance from the University of Ottawa's Research Ethics Board (REB H09-21-7089). If you have any questions regarding the ethical conduct of this study, you can contact the Protocol Officer for Ethics in Research at the University of Ottawa by phone at (613) 562-5387 or by email at ethics@uottawa.ca.

Would you allow your child to participate in this survey? (IFPS, 2020)

By clicking "Yes" below, you confirm that you are the parent/legal guardian of the child participating in this study and agree to allow them to participate. (IFPS, 2020)

1. Yes [*Proceed to screening questions*]
2. No [*Go to Confirming parental consent page*]

Page Break

Confirming parental consent

Programming note: Display message if "No" is ticked: "To confirm, you do not consent to your child's participation in this survey?" ***Please add the options:*** "No, I do not consent" **and** "Yes, I do consent to my child's participation". ***If no, go to message*** "Thank you for your time." ***If yes, continue.***

If left blank, display message "Your consent is required in order to proceed with the survey."

Page Break

Thank you. We have seven questions for you before your child can complete the survey.

1. **Where do you and your child currently live?**
 - a. Quebec
 - b. Ontario
 - c. Other province or territory (*go "Not eligible" page*)

***Programming note:** If left blank, display message: “This question is mandatory to determine whether your child can participate. If you do not want to answer, unfortunately you cannot continue.”*

Page Break

Thinking about your child aged [Age_Group] that may complete the survey...

2. How old is your child today?

- a) 9 years or younger
- b) 10 years
- c) 11 years
- d) 12 years
- e) 13 years
- f) 14 years
- g) 15 years
- h) 16 years
- i) 17 years
- j) 18 years or older

***Programming note:** If parents indicate they have children in both age groups, the text that will appear (whether this appears as 10-12 or 13-17) will depend on the least filled quota by age group. If left blank, display message: “This question is mandatory to determine whether your child can participate. If you do not want to answer, unfortunately you cannot continue.”*

Page Break

3. Thinking about your child aged [Age_Group] that may complete the survey...

What was your child’s assigned sex at birth? (Hammond, 2023, modified)

- a) Male
- b) Female

***Programming note:** If left blank, display message “This question is mandatory to determine whether your child can participate. If you do not want to answer, unfortunately you cannot continue.”*

Page Break

4. In our society, people are often described by their race or racial background. Which race category best describes the child that may participate in this survey? *Select all that apply.* (Hammond, 2023, modified)

- a) **White** (European descent)
- b) **East/Southeast Asian** (Chinese, Korean, Japanese, Taiwanese descent; Filipino, Vietnamese, Cambodian, Thai, Indonesian, other Southeast Asian descent)
- c) **South Asian** (South Asian descent, e.g., East Indian, Pakistani, Bangladeshi, Sri Lankan, Indo-Caribbean)
- d) **Black** (African, Afro-Caribbean, African-Canadian descent)
- e) **Indigenous** (First Nations, Métis, Inuit descent)
- f) **Latino** (Latin American, Hispanic descent)

- g) **Middle Eastern** (Arab, Persian, West Asian descent, e.g., Afghan, Egyptian, Iranian, Lebanese, Turkish, Kurdish)
- h) **Another race category (please specify):** _____

Programming note: *If left blank, display message: “This question is mandatory to determine whether your child can participate. If you do not want to answer, unfortunately you cannot continue.”*

5. What is the highest degree, certificate or diploma you have obtained? (Hammond, 2023, modified)
- a. Less than a high school diploma or its equivalent
 - b. High school diploma or a high school equivalency certificate
 - c. Trade certificate or diploma from a vocational school or apprenticeship training
 - d. Non-university certificate or diploma from a community college, CEGEP, school of nursing, etc.
 - e. University certificate below bachelor’s level
 - f. Bachelor’s degree
 - g. University degree or certificate above bachelor’s degree

Programming note: *If left blank, display message: “This question is mandatory to determine whether your child can participate. If you do not want to answer, unfortunately you cannot continue.”*

If the quota for the child age, sex and race, parental education and region group has been met – go to “Quota full” page

If child is eligible - proceed to following question and child consent form

Page Break

Quota full

Thank you for your time but we have now completed the number of surveys we need for this province, parental education, and children’s age, sex, and race group.

Not Eligible

Thank you for your time but for this study we are interested in children aged 10-17 who live in Ontario and Quebec.

Page Break

6. Thinking about your total monthly income, how difficult or easy is it for you to make ends meet? (Hammond, 2023)
- a) Very difficult
 - b) Difficult
 - c) Neither easy nor difficult
 - d) Easy
 - e) Very easy
 - f) Don’t know

7. What is your best estimate of the total income received by all household members, from all sources, before taxes and deductions, in the past 12 months? (Statistics Canada, 2020)
- a) Less than \$5,000
 - b) \$5,000 to less than \$10,000
 - c) \$10,000 to less than \$15,000
 - d) \$15,000 to less than \$20,000
 - e) \$20,000 to less than \$30,000
 - f) \$30,000 to less than \$40,000
 - g) \$40,000 to less than \$50,000
 - h) \$50,000 to less than \$60,000
 - i) \$60,000 to less than \$70,000
 - j) \$70,000 to less than \$80,000
 - k) \$80,000 to less than \$90,000
 - l) \$90,000 to less than \$100,000
 - m) \$100,000 to less than \$150,000
 - n) \$150,000 and over
 - o) Don't know
8. Which type of community or city do you and your child currently live in? (University of Waterloo's Statistical Consulting and Survey Research Unit's survey item bank)
- a. Large urban centre (city with estimated population of 100,000 or greater)
 - b. Medium urban area (town with estimated population of 30,000 to 99,999)
 - c. Small urban area (town with estimated population of 1,000 to 29,999)
 - d. Rural village/area (area with estimated population that is less than 1,000)

Page Break

Thank you. Now please ask your [SEX] child aged [AGE] to complete the survey independently.

When your child is ready to respond, please proceed to the next page.

Page Break

Child Consent

Before starting the survey, please read the information below and tell us if you agree to participate.

The survey will ask questions about your participation in sports and what you think of sports sponsorship. It will take about 10-12 minutes to complete. You must be between 10 and 17 years of age to participate.

The study is run by the Survey Research Centre at the University of Waterloo, on behalf of Professor Monique Potvin Kent from the University of Ottawa.

To thank you for your participation, the survey company will give your parent/guardian a reward.

Participation in this study is voluntary. You do not have to participate in the study if you do not want to. If you decide to participate, you can refuse to answer any question by skipping the question. Your parent/guardian will still receive the reward if you refuse to answer any questions. You can stop

participating at any time if you wish and any information collected will be deleted. We don't think there are any risks associated with completing this survey.

The survey does not ask for your name so no one will know that you participated in the study, nor will anyone know your answers. Only the researchers involved in this study will see your survey responses. Your information will be kept by the Survey Research Centre for 7 years in a secure location at the University of Waterloo. Your survey responses will also be analyzed by Professor Monique Potvin Kent and her students at the University of Ottawa. They will store your information on password-protected computers.

This study has been reviewed and received ethics clearance from the University of Ottawa's Research Ethics Board (REB H09-21-7089). If you have any questions for the ethics board, you can contact the Protocol Officer for Ethics in Research at the University of Ottawa by phone at (613) 562-5387 or by email at ethics@uottawa.ca.

Do you agree to participate in this survey?

1. Yes [Go to the next page.]
2. No [Participant to be shown: "Thank you for your time. You will now be redirected back to Léger"]

Programming note: Display message if "No" is ticked: "To confirm, you do not consent to participate in this survey?" **Please add the options:** "No, I do not consent" **and** "Yes, I do consent to participate". **If no, go to message** "Thank you for your time." **If yes, continue.**

If left blank, display message "Your consent is required in order to proceed with the survey."

End of block: Intro

Page Break

Online survey with children and adolescents

Experience with food company sponsorship in community sports

The following questions are about food-related companies that sponsor the sporting activities of children and teens. When companies sponsor these activities, they often provide money, sports equipment, or other forms of support. In return, the name or logo of sponsors are often displayed on sports uniforms, equipment, or signs at sporting events.

9. Are you aware of any restaurant, food, or beverage company that sponsor children and teen's sports teams or events like tournaments and competitions?

No (**go to Q9**)

Yes

Don't know (**go to Q9**)

Page Break

10. Please name up to five restaurant, food and beverage companies that sponsor children and teen's sports teams or events like tournaments and competitions.

Company 1: (open field)

Company 2: (open field)
Company 3: (open field)
Company 4: (open field)
Company 5: (open field)
Don't know

Page Break

11. In the last 12 months, have you played or competed on any sports teams outside of school? (Kelly, 2012, modified)

By sports teams we mean any sport where you compete against other players or athletes and are a member of a team. This includes sports like hockey, soccer and volleyball or individual sports like competitive swimming, figure skating and gymnastics where you are part of a team or club.

No (*go to question 18*)

Yes

Don't know (*go to question 18*)

Page Break

12. What sports teams were these? **Select all sports that apply.** (Kelly, 2012, modified)

Hockey	Curling
Soccer	Softball
Baseball	Snowboarding
Volleyball	Speed skating
Basketball	Figure skating
Football	Martial arts
Downhill skiing	Gymnastics
Cross-country skiing	Ringette
Cycling	Lacrosse
Swimming	Track and field
Tennis	Other,
Dancing	specify:_____
Cheerleading	Don't know

Page Break

13. When you played or competed on a sports team outside of school in the last 12 months, did you see the names or logos of restaurant, food, or beverage companies in the following places? (Hammond, 2021, modified)

	Yes	No	Don't know
on prizes (like trophies, medals, and certificates)			
on uniforms, equipment, or other items (like water bottles) provided by your sports team (Hammond, 2021, modified)			
on signs at games, tournaments, competitions or practices (Hammond, 2021, modified)			

Page Break

14. *[If yes to any items in question 11]:* What restaurant, food or beverage company logos or names did you see on sports uniforms, equipment, prizes, and/or signs when you were competing on a sports team outside of school in the last 12 months?

Company 1: (open field)

Company 2: (open field)

Company 3: (open field)

Company 4: (open field)

Company 5: (open field)

Don't know

Page Break

15. *[If yes to any items in question 11]:* Did you like these restaurant, food, or beverage companies more or less after seeing their name or logo on prizes, equipment and/or signs displayed at your sporting events? (Kelly, 2012, modified)

Liked them less

Liked them the same

Liked them more

Don't know

Page Break

16. In the last 12 months, did you and your sports team receive free food or drinks from a restaurant, food, or beverage company before, during or after a training, practice, game, or competition?

No

Yes

Don't know

17. In the last 12 months, did you receive a coupon or gift certificate for a restaurant, food, or beverage company from your sports team? (Kelly, 2012, modified)

No

Yes

Don't know

Page Break

18. *[If Yes to Q14 and Yes to Q15]:* What restaurant, food or beverage company were this/these coupon(s) or gift certificate(s) for? And which company provided the free food or drinks?

[If Yes to Q14 and No to Q15]: What restaurant, food or beverage company provided free food or drinks?

[If No to Q14 and Yes to Q15]: What restaurant, food or beverage company were this/these coupon(s) or gift certificate(s) for?

Company 1: (open field)

Company 2: (open field)

Company 3: (open field)

Company 4: (open field)

Company 5: (open field)

Don't know

Page Break

19. Did you like the restaurant, food, or beverage company more or less after they gave you this coupon, gift certificate and/or free food? (Kelly, 2012, modified)

Liked them less

Liked them the same

Liked them more

Don't know

Page Break

Views of food company sponsorship

Think now about food companies that sponsor or give money to your own sports team or the sports teams of other children and teens, such as fast-food chains or companies that make sports drinks, chocolate, or other foods.

Please tell us if you agree or disagree with the following statements.

	Disagree	Agree	Don't know
20. Food companies sponsor or give money to the sports teams of children and teens to help them out. (Kelly, 2012, modified)			
21. Food companies sponsor or give money to the sports teams of children and teens to encourage people to buy their products. (Kelly, 2012, modified)			
22. It is common for food companies to sponsor or give money to the sports team of children and teens.			
23. Food companies that sponsor or give money to the sports teams of children and teens are cool. (Kelly, 2012, modified)			
24. Food companies that sponsor the sports or give money to teams of children and teens are generous. (Kelly, 2012, modified)			
25. If a food company sponsored or gave money to my sports team, I would want to buy their products to support them in return. (Kelly, 2012, modified)			
26. [If yes answered to question 5]: I have bought or asked my parents to buy a food or beverage from a food company because they sponsored or gave money to my sports team. (Kelly, 2012, modified)			

Page Break

Appeal and the perceived audience of advertisements with sports-related content

PROGRAMING NOTE: Respondents will be randomized into 4 groups and will view one of 4 advertisements and will respond to different questions.

Advertisement 1: Advertisement for Tim Bits hockey

Please watch the following advertisement.

Tim Bits advertisement ENG – Ask a TimBit (30 seconds):

<https://www.youtube.com/watch?v=DFao5z093iQ>

Tim Bits advertisement FR – Demander à un TimBit (30 seconds) <https://www.youtube.com/watch?v=F-5vfod5cQA>

Perceived audience

27. What age group is this ad for? Select all age groups that apply. (Hammond & Reid, 2018, modified)

- a) People younger than me
- b) People my age
- c) People older than me
- d) Don't know

Emotional response

28. This advertisement makes me feel....



Horrible

Neither horrible
nor great

Great

Advertising appeal and impact on perception and behavioural intentions

29. This ad makes me think going to Tim Hortons is.... (Critchlow et al. 2020, modified)

- a) Very boring
- b) Boring
- c) Neither boring nor fun
- d) Fun
- e) Very fun

30. This ad makes Tim Hortons seem like... (Critchlow et al. 2020, modified)

- a) A very unhealthy restaurant
- b) An unhealthy restaurant
- c) Neither an unhealthy nor healthy restaurant
- d) A healthy restaurant
- e) A very healthy restaurant

31. How much, if at all, does this ad make you want to go to Tim Hortons?

- a. Not at all
- b. A little
- c. A lot

Perceived intention

To what extend do you agree or disagree with the following statements.

32. Tim Hortons supports children's hockey to encourage people to go to their restaurant and buy their food.

- a) Strongly disagree
- b) Disagree
- c) Neither disagree nor agree
- d) Agree
- e) Strongly agree

33. Tim Hortons supports children's hockey because they care about the community.

- a) Strongly disagree
- b) Disagree
- c) Neither disagree nor agree
- d) Agree
- e) Strongly agree

Advertisement 2

Please watch the following advertisement.

Tim Hortons advertisement ENG – Sidney Crosby and collectible cards (30seconds):

https://www.youtube.com/watch?v=kMZhEsDyH_4

Tim Hortons advertisement FR – Sidney Crosby and collectible cards (30seconds):

<https://www.youtube.com/watch?v=uJlls57zrsw>

Perceived audience

18. What age group is this ad for? *Select all age groups that apply.* (Hammond & Reid, 2018, modified)

- a) People younger than me
- b) People my age
- c) People older than me
- d) Don't know

Emotional response

19. This advertisement makes me feel....



Horrible

Neither horrible
nor great

Great

Advertising appeal and impact on perception and behavioural intentions

20. This ad makes me think going to Tim Hortons is (Critchlow et al. 2020, modified)

- a) Very boring
- b) Boring
- c) Neither boring nor fun
- d) Fun
- e) Very fun

21. This ad makes Tim Hortons seem like... (Critchlow et al. 2020, modified)

- a) A very unhealthy restaurant
- b) An unhealthy restaurant
- c) Neither an unhealthy nor healthy restaurant
- d) A healthy restaurant
- e) A very healthy restaurant

22. How much, if at all, does this ad make you want to go to Tim Hortons?

- a) Not at all
- b) A little
- c) A lot

Perceived intention

23. Did you know professional hockey players were featured in this ad?

- a) No
- b) Yes
- c) Don't know

24. Professional hockey players are featured in this ad because they think Tim Hortons is a good restaurant.

- a) Strongly disagree
- b) Disagree
- c) Neither disagree nor agree
- d) Agree
- e) Strongly agree

25. Professional hockey players are featured in this ad because Tim Hortons paid them.

- a) Strongly disagree
- b) Disagree
- c) Neither disagree nor agree
- d) Agree
- e) Strongly agree

Advertisement 3 – Tim Horton's Raptor sponsorship advertisement

Please watch the following advertisement.

Tim Hortons Raptors sponsorship advertisement – https://www.youtube.com/watch?v=_1J5Gm5HKQM

*Subtitles will be added for French respondents

Perceived audience

18. What age group is this ad for? Select all age groups that apply. (Hammond & Reid, 2018, modified)

- a) People younger than me
- b) People my age
- c) People older than me
- d) Don't know

Emotional response

19. This advertisement makes me feel....



Horrible

Neither horrible
nor great

Great

Advertising appeal and impact on perception and behavioural intentions

20. This ad makes me think going to Tim Hortons is... (Critchlow et al. 2020, modified)

- a) Very boring
- b) Boring
- c) Neither boring nor fun
- d) Fun
- e) Very fun

21. This ad makes Tim Hortons seem like... (Critchlow et al. 2020, modified)

- a) A very unhealthy restaurant
- b) An unhealthy restaurant
- c) Neither an unhealthy nor healthy restaurant
- d) A healthy restaurant
- e) A very healthy restaurant

22. How much, if at all, does this ad make you want to go to Tim Hortons?

- a) Not at all
- b) A little
- c) A lot

Perceived intention

23. Does Tim Hortons sponsor the Toronto Raptors?

- a) No
- b) Yes
- c) Don't know

24. Tim Hortons sponsors professional sports to encourage people to go to their restaurant and buy their food.

- a) Strongly disagree
- b) Disagree
- c) Neither disagree nor agree
- d) Agree
- e) Strongly agree

25. Tim Hortons sponsors professional sports to support sports and athletes.

- a) Strongly disagree
- b) Disagree
- c) Neither disagree nor agree
- d) Agree
- e) Strongly agree

Advertisement 4 – Advertisement for Tim Hortons unrelated to sports

Please watch the following advertisement.

Tim Hortons Always Fresh Coffee ad ENG– <https://www.youtube.com/watch?v=dCrmCaR6JNM>

Tim Hortons Always Fresh Coffee ad FR– <https://www.youtube.com/watch?v=x7D9PtxwHvg>

Perceived audience

18. What age group is this ad for? Select all age groups that apply. (Hammond & Reid, 2018, modified)

- a) People younger than me
- b) People my age
- c) People older than me
- d) Don't know

Emotional response

19. This advertisement makes me feel....



Horrible

Neither horrible
nor great

Great

Advertising appeal and impact on perception and behavioural intentions

20. This ad makes me think going to Tim Hortons is....(Critchlow et al. 2020, modified)

- a) Very boring
- b) Boring
- c) Neither boring nor fun
- d) Fun
- e) Very fun

21. This ad makes Tim Hortons seem like... (Critchlow et al. 2020, modified)

- a) A very unhealthy restaurant
- b) An unhealthy restaurant
- c) Neither an unhealthy nor healthy restaurant
- d) A healthy restaurant
- e) A very healthy restaurant

22. How much, if at all, does this ad make you want to go to Tim Hortons?

- a) Not at all
- b) A little
- c) A lot

Page break

Sponsorship of professional sports – recall and potential impact

26. In the last 12 months, did you watch professional or extreme sports on television, online or in person?

- a) No (go to Q32)
- b) Yes (go to Q27)
- c) Don't know (go to Q32)

Page break

27. *If yes to Q26:* In the last 12 months, what was your favorite professional or extreme sports team or event to watch? Name up to three sports teams or events. (Kelly, 2012, modified)

Sport team/event 1: (open field)

Sport team/event 2: (open field)

Sport team/event 3: (open field)

Don't know

Page break

Some professional and extreme sports teams or events are sponsored by companies. When you watch these sports, the name or logo of sponsoring companies are often displayed on jerseys, sporting equipment and signs, or in the area where athletes compete (e.g., ice, hockey boards, court, field). The sponsor's name may also appear in the name of the sports team or event. At sporting events, sponsors may also be involved in giveaways.

28. In the last 12 months, which of these sports teams and/or events were sponsored by a RESTAURANT, FOOD OR BEVERAGE company? Such as fast-food chains and companies that make sports drinks, chocolate, and other foods. Select all that apply (Kelly, 2012, modified)

- ☐ sports team/event 1 (*populate with response from Q27*)
- ☐ sports team/event 2 (*populate with response from Q27*)
- ☐ sports team/event 3 (*populate with response from Q27*)
- ☐ None were sponsored by a restaurant, food or beverage company (*go to Q32*)
- ☐ Prefer not to answer (*go to Q32*) Don't know

Page break

29. **[PROGRAMMING NOTE: Auto populate 29 with responses written in 28]**

List all the **RESTAURANT, FOOD** and **BEVERAGE** companies you can think of that sponsored [sports team/event X] (Kelly, 2012)

Sponsor 1: (open field)

Sponsor 2: (open field)

Sponsor 3: (open field)

Sponsors 4: (open field)

(...)

Don't know/refuse to answer

I can't think of any sponsors / don't know [*PROGRAMMING NOTE: Go to Q32*]

Programming – populate question choosing one sports team or event at random reported as having a restaurant, food, and beverage sponsor Q28.

Page break

30. Knowing that this company or these companies sponsored your favorite sports team or event do you: (Kelly, 2012)
- Like these companies or restaurants less
 - Like these companies or restaurants the same
 - Like these companies or restaurants more
31. Have you bought, or wanted to buy products more or less because this company or these companies sponsored your favorite sports team or event? (Kelly, 2012)
- Buy them less
 - Buy them the same
 - Buy them more

Page Break

32. In the last 30 days, have you seen ALCOHOL advertised by sports teams or athletes? (Hammond, 2021, modified)

Alcohol includes beer, wine, cider, liquor/spirits (e.g., rum, gin, vodka), spritzers, coolers, and any other beverage containing alcohol.

- No
 - Yes
 - Don't know
33. During a normal week, how much time do you spend watching professional sports on television, online or in person? (Hammond, 2021, modified)
- 0 hours (none)
 - Up to 1 hour
 - Up to 2 hours
 - Up to 4 hours
 - Up to 6 hours
 - Up to 8 hours
 - Up to 10 hours
 - More than 10 hours
 - Don't know

Programming: Show if Q26 is yes or was skipped

34. In a normal week, how many days do you eat meals and snacks or have drinks from a restaurant?
This includes dining in a restaurant, takeout, and delivery. (Minaker et al. 2025)

- 0 days (not at all)
- 1 day
- 2 days
- 3 days
- 4 days
- 5 days
- 6 days
- 7 days (every day)

Page Break

End of survey

Thank you for completing the survey!

As a reminder, this project has been received ethics clearance from the University of Ottawa's Research Ethics Board (REB H09-21-7089). If you have questions for the ethics board, please contact the Protocol Officer for Ethics in Research at the University of Ottawa by phone at (613) 562-5387 or by email at ethics@uottawa.ca.

If you have any questions about the study or if you wish to know the results, you may contact the Principal Researcher, Monique Potvin Kent by phone at (613) 562-5800 ext. 7447 or by email at monique.potvinkent@uottawa.ca.

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