INFORMAS Canada

An in-depth look at Canada's food environments

Results from INFORMAS Canada

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Further information on INFORMAS Canada is available at **https://informascanada.com/**

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*Documents available online **https://informascanada.com/2025-report**

Contents

Executive Summary

Health, dietary patterns and food environments

Unhealthy dietary patterns are a main contributor to current high rates of noncommunicable disease in Canada and globally. National data suggest that overall, very few individuals in Canada achieve or maintain healthy dietary patterns as recommended in Canada's food guide. The environments in which people make food choices (also known as their food environments) are a critical determinant of dietary patterns and heavily influence consumer food purchasing and consumption.

Food environments are complex systems, shaped by government policies and actions of food companies, that influence the quality of foods, how foods are labelled, promoted, priced and placed. There are many potential points of intervention—in the manufacturing process, in schools, hospitals, recreation centres, grocery stores, restaurants and more. Digital environments are increasingly important influences on healthier dietary patterns, as food purchasing and promotion are shifting to online environments.

The current report aims to:

- benchmark the status of food environments in Canada and identify the most significant gaps where food environments do not support healthy eating;
- examine how food environments in Canada may contribute to improving or exacerbating dietary and health inequities.

INFORMAS Canada study

This comprehensive evaluation of the Canadian food environment was undertaken using the International Network for Food and Obesity and noncommunicable disease Research, Monitoring and Action Support (INFORMAS) framework and associated research methods. The INFORMAS framework breaks food environments down into seven policy areas (food composition, food labelling, food marketing, food provision in public sector settings, food retail, food prices and food trade and investment), which are shaped by food- and nutrition-related policies and actions of the public and private sectors. Together, these policy domains interact to influence population diet, physiological and metabolic risk factors and health outcomes.

This report collates the results of multiple independent studies conducted across Canada between 2020 and 2024 by the INFORMAS Canada network and others that have rigorously evaluated elements of food environments. Many of these studies represent unique collaborations established to bring together existing data and collect new data, adapting elements of INFORMAS methodologies to provide a comprehensive portrait of Canadian food environments.

Key highlights of the content include:

Public sector policies and actions related to food environments

In 2023, a group of 58 experts in various domains related to health, food, nutrition and policy evaluated existing food environment policies in Canada and current policy gaps where existing policies did not meet established good practice statements. Considering these gaps, experts developed a series of recommended actions for federal, provincial and territorial governments to pursue. The five priority policy actions for the federal government were:

1. Prohibit marketing of less healthy food products and brands through all forms of media to which children may be exposed.
2. Fund a comprehensive and universal national school food program.
3. Implement mandatory targets for sodium, free sugar, and saturated fat for key food categories in packaged and restaurant foods.
4. Invest in inclusive strategies to improve the affordability of healthy foods for those with lower incomes.
5. Implement a sugary drink levy on all sugary drinks and invest the revenue in policies to reduce health inequities.

Experts also recommended 2 priority infrastructure support actions to ensure that policies can be effectively implemented in Canada:

1. Revise the Healthy Eating Strategy, with dietary inequities as a central focus.
2. Comprehensively monitor dietary patterns on an ongoing basis, ensuring that marginalized groups are fully represented in the data.

Food company actions and commitments related to food environments

An analysis of the Canadian packaged food and retailing sectors found that the food retailing sector and to some extent the non-alcoholic beverage sector were highly concentrated, meaning that very few companies hold great power within the Canadian food system, and have the potential to exert great influence on food environments. Further analysis of food company voluntary actions used the BIA-Obesity tool to score food manufacturing companies and retailers, for which a higher score reflected stronger policies and commitments that promoted healthier food environments and dietary practices. Results for Canada's largest food and beverage manufacturing companies from 2023 showed that company scores varied greatly, from 18 to 75 points out of 100, with a median score of 49 points for manufacturers and from 21 to 25 (median = 22) for retailers. Scores were highest for the areas of 'corporate nutrition strategy' and 'product (re)formulation', and lowest for 'product accessibility.'

Composition of packaged foods

In general, the Canadian packaged food supply is dominated by less healthy products. An analysis of 14,248 packaged foods showed that around two-thirds (64%) of products were high in sodium, sugars and/or saturated fats, and that only 12% of products were low in these three nutrients. Overall, 40% of products were high in one nutrient, 22% were high in two nutrients, and 3% would display a 'high in' nutrition symbol for all three of these nutrients of concern.

Labelling of packaged foods

Nutrition-related claims are commonly found on packaged foods in Canada and may result in consumer confusion when front of package labels are introduced. An analysis of 2942 products in five food categories revealed that almost three-quarters of products featured any type of claim, and two-thirds of products featured nutrition claims. In three categories (breakfast cereals, dairy and plant-based milks, and dairy and plant-based yogurts and kefir), 90% of products carried some type of nutrition-related claim. Approximately half of foods with nutrition claims would also be required to carry a front of package symbol indicating these foods are high in sodium, sugar or saturated fat, which will result in conflicting information for consumers.

Unhealthy food marketing

Children in Canada are exposed to marketing on various media, on product packages and across settings. For example, screen capture data collected from a convenience sample of 50 children (6-11 y) and 50 adolescents (12-17 y) in 2022-2023 estimated that children were exposed to 1.96 food ads/child/30-min (4067 ads/child/year) and adolescents to 2.56 food ads/adolescent/30-min (8301 ads/adolescent/year) through their digital devices. In an analysis of five food categories, 33.3% of products displayed child-appealing marketing techniques on their packaging. In areas around schools, 65.7% of food stores and 58.9% of restaurants had exterior food or beverage ads, mostly for less healthy foods and beverages. In a sample of 134 recreation and sports centres across Canada, there was a median of 11.5 instances of food promotions per facility, and among a sample of 112 schools, 17% reported the presence of advertising of less healthy foods, beverages or brands on school grounds, and 57% reported using less healthy foods, beverages or brands during fundraising activities. Further, more than two-thirds of outdoor ads within a 1 km radius of schools were for less healthy foods and beverages. Taken together, these marketing data suggest that, on a daily basis, an average 9-year-old might be exposed to at least 37 food ads, and an average 14-year-old to 44 food ads, mainly advertising less healthy products.

Food provision in public sector settings

Research examining schools, hospitals and recreation centres underscores characteristics of unhealthy food environments in many of these settings. In a sample of 112 schools, around half reported having developed their own written school food policy. When examining the healthiness of foods in schools, 82% of schools reported having at least 1 sugary drink available for purchase on a regular basis and only 14% offered exclusively healthier options. Overall, 55% of schools reported selling both fruits and vegetables regularly. In a sample of 152 hospitals, 65% reported having a written hospital food policy. Of the sample, 99% of hospitals reported offering at least one sugary drink and 74% reported selling both fruits and vegetables regularly. The display of nutrition information (e.g., calorie or sodium content per serving) in hospital cafeterias surveyed was infrequent. In a sample of 134 recreation and sports centres across Canada, on average, only about one-third (36.5%) of beverages per vending machine were low in sodium, sugar and saturated fat.

Food retail settings

Studies on community food environments indicate a large number of opportunities to purchase foods around schools in Canada. In a sample of 6 large urban centres, there was an average of 26 stores to purchase foods within a 1 km radius around schools, including, on average, between three to 16 food stores, two and seven fast-food restaurants and six to 27 other types of restaurants where children could purchase food, which differed across cities. Within consumer retail environments of food stores sampled across 13 different cities, at least one less healthy food item was available in 89% to 94% of checkout aisles, 94% of end caps and 98% of island displays. Of the sample, one in two stores had “junk food power-walls”, which displayed a multitude of candy varieties, salty snacks, and/or caloric beverages at check-out locations. In fast food restaurants, 98% of entrées featured on the children’s menus were considered less healthy foods.

Food prices

Food prices indicate that unhealthy foods may be less accessible than their healthier counterparts. Between 2017 and 2020, prices increased in 10 packaged food categories (Bakery, Eggs, Fish, Fruit, Legumes, Meat, Salad, Snacks, Soups and Vegetables) and decreased in four categories (Beverages, Miscellaneous, Sugars and Foods for children). Across almost all food categories, the healthiness of products was not a predictor of whether food prices increased or decreased over time. Products that had been reformulated (with higher or lower levels of calories and/or nutrients) did not have different changes in prices than those that had not been reformulated. For some categories that contribute to intake of free sugars (Sugars, Syrups, Preserves, Confectionery and Dessert; Juice; Regular Soft Drinks), more expensive products tended to have lower total and free sugar amounts. In contrast, for Baked Products, prices increased in line with free sugar content. The average weekly cost of a nutritious food basket for a reference family of four living in Canada differed according to location. For families living in the Atlantic provinces, the cost of a nutritious food basket varied between $399.03 to $418.38 CAD, more expensive than for families living in other provinces or territories, where it ranged from $317.29 to $389.38 CAD.

Food trade and investment

Trade and investment practices in Canada have important implications for the manufacturing of foods and the movements of food products across borders. Ultra-processed foods have tended to have higher tariff rates relative to foods with lower levels of processing. This is good news, as higher tariff rates are likely to result in higher prices and/or lower availability and consumption of these products from imported sources. Tariff rates across all levels of processing remained highest on eggs and dairy products, consistent with their status as supply managed agricultural sectors in Canada. Trends over time did not suggest greater growth in processed and ultra-processed food imports relative to less processed food imports; however, the subset of foods that experienced significant periods of growth in import volumes (e.g., dairy products, sugars, prepared and preserved meats, and soft drinks) over time, without subsequent declines, tended to be associated with poorer nutrition and higher levels of processing. There have been major increases in foreign direct investment in food manufacturing in Canada over the past several years, though data limitations made it difficult to identify specific targets of that investment and the subsequent nutrition implications.

Digital food environments

Digitalization of food environments is occurring at a fast pace. Evidence from digital food environments has identified that children and adolescents are exposed to high amounts of digital food marketing through their digital device (4067 food ads/child/year and 8301 food ads/adolescent/year, both brands and products, most of which (90%) were less healthy. Unhealthy food and beverage brands that are popular with children are frequently mentioned on social media and contribute to the normalization of the consumption of unhealthy food and beverages. Studies examining nutrition information on online grocery websites and online delivery platforms found that nutrition information was not always available, and when available, was not presented consistently and in line with regulations required in physical food retail or restaurants settings. Digital food environments remain underrepresented in food environments research in Canada and additional research and policy attention is needed to ensure food environment policies equally address these food environments.

Equity in food environments

Individuals with lower socioeconomic position may be more likely to be exposed to unhealthy food environments, and may be more susceptible to their negative impacts due to more limited resources (such as money and time). In Canada, the limited evidence suggests there may be some small differences in the healthiness of food outlets in areas with greater socioeconomic deprivation, but this is not consistently the case. There are also data that suggest that youth in Canada with lower socioeconomic position report greater exposures to unhealthy food marketing. Regional differences in the cost of healthy food also indicate inequities across regions in Canada. Differences in exposure and susceptibility to food environment factors contribute to significant inequities in diet quality and health. Some policies, such as improving the quality of the food supply, may be particularly likely to enhance equity, and equity considerations are essential in future policy development in Canada to address existing inequities in diet and health. However, ultimately, it is only by addressing social inequities that dietary inequities can be reduced or eliminated. More research is needed to better understand differential exposures to food environments and vulnerabilities of individuals with varying socioeconomic positions.

Conclusion and implications

Existing Canadian food environments undermine healthy eating. Data from the past five years indicate that the Canadian packaged food supply consists largely of foods that are high in nutrients of concern, less healthy foods are readily available and promoted across retail settings and children in Canada are heavily exposed to marketing of less healthy foods in their daily lives. Less healthy food environments are present in many publicly-funded settings like schools, hospitals and recreation centres. Access to healthy food varies across provinces, and there is some indication that healthier options may be more expensive in some food categories. These unhealthy food environments contribute to unhealthy dietary patterns among individuals in Canada, increasing rates of diet-related noncommunicable diseases and poor health and well-being.

While the largest food companies in Canada (i.e., with ≥1% market share in 2020/21) are making some efforts to improve food environments, progress is slow, and government intervention is likely necessary to encourage positive change among all companies. Governments have capacity to improve food environments through regulation and policy. While some policy actions have been taken by governments across Canada, a series of expert-identified recommendations have been developed that, if implemented, could contribute to creating healthier, more equitable food environments. Ongoing, bold action will be needed going forward from all levels of government to improve the quality of food environments for all individuals in Canada.

Food environments in Canada:
A look at the numbers

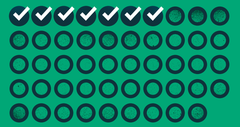
PUBLIC FOOD ENVIRONMENT POLICIES

Areas where the federal government is doing well:

- **Composition:** Prohibiting the use of partially hydrogenated oils in foods
- **Labelling:** Updated and comprehensive food labelling regulations, including mandatory front-of-package labels for products high in sodium, saturated fat and/or sugars
- **Leadership:** Revision of Canada's food guide based on current scientific evidence

Areas where the federal government can improve:

- **Composition:** No targets or restrictions for added sugars or saturated fats in processed foods
- **Labelling:** No policies, strategies or supports for menu labelling
- **Provision:** Little support and few training systems to help public sector organizations implement healthy food service policies and guidelines



The federal government was meeting **good practice statements** for

7/49

policy and infrastructure support indicators

UNHEALTHY FOOD MARKETING

Over the course of the day, kids could see as many as **40 food and beverage ads**, the majority of which are less healthy.

Children saw an estimated **4,067** food ads in one year on their mobile devices

Adolescents saw an estimated **8,301** food ads in one year on their mobile devices

90% of those ads were for **less healthy foods** or **brands**.

88.8% of recreation and sports centres had at least **1 instance** of **food promotion**, and those instances were **mainly for unhealthy products**, **brands** or **retailers**

Within a 1-km radius of schools, the average number of outdoor ads varied from **8 ads** (Halifax) to **35 ads** (Vancouver).

FOOD RETAIL

>85% of food stores had **at least 1 less healthy food** in key placement areas (checkout aisles, end caps, island displays)

1/2 **stores had "junk food power-walls"**

Schools had between **19 to 45 food outlets** within a 1km radius, including between **2 and 7 fast-food restaurants**

98% of entrées featured on children's menus were less healthy and nutrition information for all items on children's menus was limited

50% of menu items on major online food delivery platforms did not have calorie information

FOOD COMPOSITION

64%

of packaged food products were **high in sodium**, **sugars** and/or **saturated fats**

FOOD LABELLING

45%

of products with nutrition claims on their packages would also display a front-of-package symbol **warning for high in sodium**, **sugars** and/or **saturated fats**

PRIVATE SECTOR FOOD ENVIRONMENT POLICIES

49/100

Median score for food and beverage manufacturing companies' **commitments to support healthier diets** and **chronic disease prevention**

FOOD TRADE

Number of countries that trade freely with Canada on highly processed ready-to-eat meals:

66 (2005) → **107** (2020)

Foreign direct investment into Canadian food manufacturing industry (2020–2022)
CAD $ 32.6 billion

FOOD PRICES

In Manitoba, a family of 2 adults and 2 children paid an average of **$317.29** for a nutritious food basket; in Newfoundland and Labrador, this cost was **$418.38**.

FOOD PROVISION IN PUBLIC SETTINGS

RECREATION AND SPORTS CENTRES

64%

of beverages per beverage vending machine were classified as **healthier**, and this prevalence was similar between centres with and without provincial nutrition guidelines

SCHOOLS

82%

of schools reported selling at least **1 sugary drink** on a regular basis and **55%** reported selling both fruits and vegetables regularly

89%

of schools reported having developed or following a written school food policy

HOSPITALS

99%

of hospitals reported selling at least **1 sugary drink** on a regular basis and **74%** reported selling both fruits and vegetable on a regular basis

65%

of hospitals reported having a written hospital food policy

Bold and courageous actions are needed to create healthier food environments for current and future generations

Abbreviations

BIA-Obesity	Business Impact Assessment – Obesity and population-level nutrition
BMI	Body mass index
CFG	Canada's food guide
CMAT-R	Canadian Marketing Assessment Tool in Restaurants
CMAT-S	Canadian Marketing Assessment Tool in Stores
dNNFB	digital National Nutritious Food Basket
DV	Daily value
FLIP	Food Label Information Program
Food-EPI	Food Environment Policy Index
FoodMATS	Food and beverage Marketing Assessment Tool for Settings
FOP	Front-of-package
HEFI-2019	Healthy Eating Food Index-2019
INFORMAS	International Network for Food, Obesity and noncommunicable diseases Research, Monitoring and Action Support
NCD	Noncommunicable disease
UPF	Ultra-processed foods
WHO	World Health Organization
WTO	World Trade Organization

Background

Unhealthy dietary patterns are a main contributor to current high rates of noncommunicable disease in Canada and globally. Dietary risk factors, including low intake of fruits and vegetables, nuts and seeds, and whole grains; alongside high sodium and sugary drink consumption[1], negatively influence health and result in increased rates of disease.

Food environments are a critical determinant of dietary patterns. Consumer purchasing and consumption patterns are heavily influenced by **food environments**, comprising the political, physical, economic and sociocultural factors that influence what foods and beverages are available, accessible and attractive for consumers[2]. Canadian governments have identified healthier dietary patterns and creating healthier food environments as a priority (see **Box 1**).

Food environments shape dietary patterns and quality[2,6]. For example, characteristics of the built food environment related to food prices, food placement, and proximity to and density of food outlets have been shown to either improve or hinder food intake, dietary quality and influence health-related outcomes, such as body mass index (BMI).[7] There is also evidence that the impact of food environments is sometimes different among specific subgroups of the population, such as children, females, or among racialized groups[7]. For example, there is strong evidence that children's environmental exposure to food marketing influences food preferences, request to parents and dietary patterns[8-10], which ultimately can lead to weight gain and diet-related diseases[11]. In several countries, neighbourhood availability of food vendors and food availability in schools have been shown to influence food intake, and the density of food vendors has been significantly associated with BMI.[6,12,13]

Food environments are strongly shaped by government policies and food industry practices. National and subnational government policies have the potential to influence the quality of foods, how foods are labelled, promoted, priced and placed. Private food companies, including food manufacturers, retailers and restaurant food services operate within the policy environments that are created by governments, but can also proactively take individual action to create healthier food environments and support healthier dietary patterns. Civil society also plays a role in shaping food environments, through sociocultural norms and practices, and citizen advocacy to encourage action in this key area.

Government of Canada & food environment policy

In 2016, Health Canada announced the Healthy Eating Strategy (HES), a set of policy and regulatory approaches to improve food environments in Canada and ultimately help people living in Canada to make healthier choices[3]. Key elements of the strategy targeted nutrition information and food labelling, food composition and food marketing to children.

In 2019, Agriculture and Agrifood Canada introduced the national Food Policy for Canada, which also included critical food environment policy mandates, including a national school food program[4], support for local and sustainable food production, and approaches to address food insecurity, among others[5].

Other federal governmental agencies, including the Public Health Agency of Canada, Employment and Social Development Canada and others are also active in food-related policy decisions. In short, many governmental groups are actively working in policy areas that influence food environments.

Box 1

The need to create healthier food environments to improve healthy eating and diet-related outcomes has been recognized globally (see **Box 2**). The International Network for Food and Obesity and noncommunicable disease Research, Monitoring and Action Support (INFORMAS) has established a framework and associated research methods to comprehensively evaluate food environments. The INFORMAS framework breaks the food environment down into 7 policy areas, which are shaped by food- and nutrition-related policies and actions of the public and private sectors (see **Figure 1**). Together, these policy domains interact to synergistically influence key elements of food environments that can influence dietary patterns and health.

The current report aims to benchmark the status of food environments in Canada and identify the most significant gaps where food environments do not support healthy eating, thereby identifying areas for strengthening policy. The report also seeks to examine how food environments in Canada may contribute to improving or exacerbating dietary and health inequities.

International efforts to support healthy, sustainable food systems

Large international initiatives for health and sustainability have emerged in recent decades The United Nations declared 2016-2025 the *Decade of Action on Nutrition*[14] to support achievement of the World Health Organization (WHO) *Global Action Plan for the Prevention and Control of NCDs 2013-2020*[15] and the *Sustainable Development Goals*[16,17].

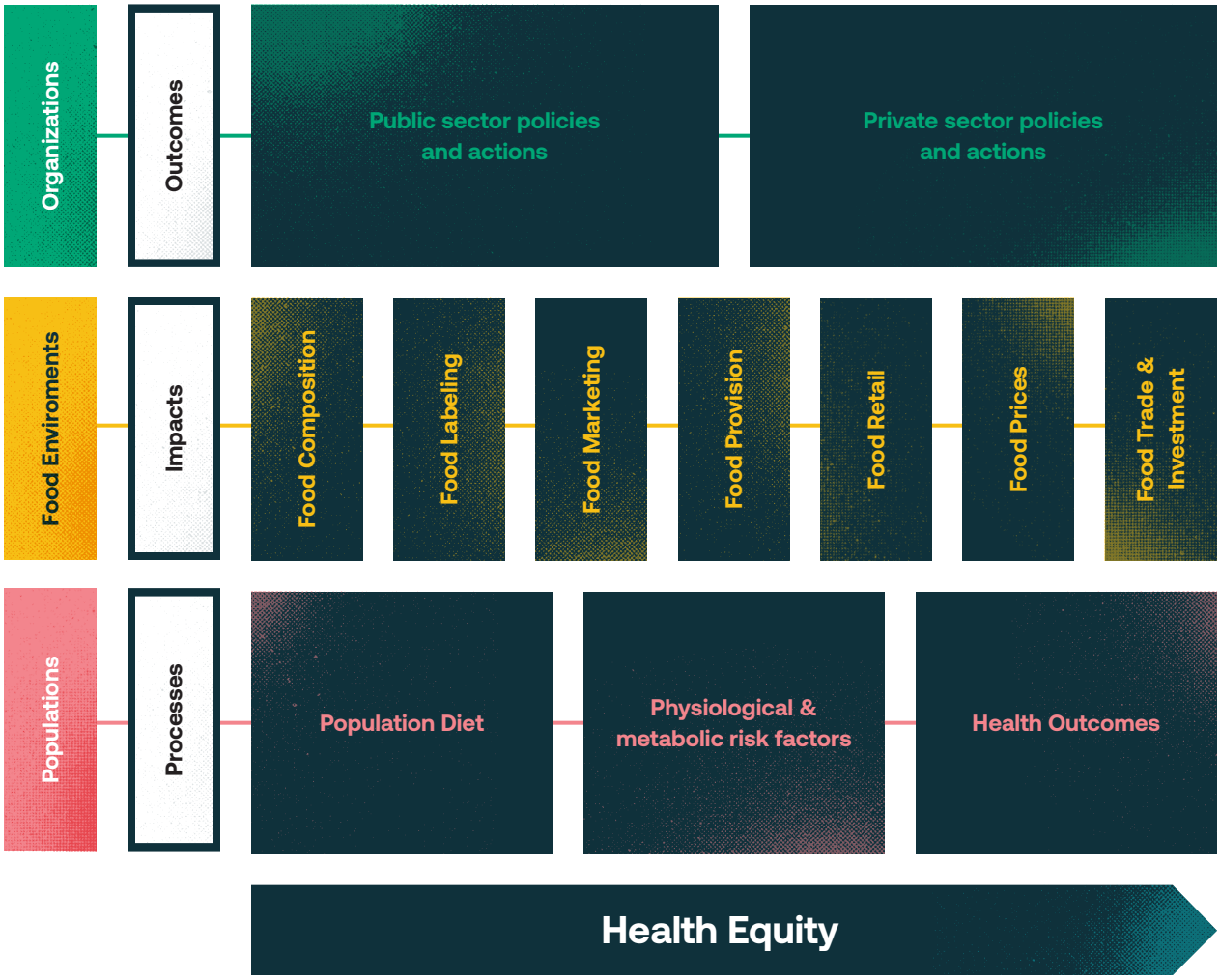
Voluntary global targets in the *Global Action Plan for the Prevention and Control of NCDs 2013-2020* included a number of policy commitments, including restrictions on marketing of foods to children and improved food labelling, guidelines for sodium, sugar and calorie reduction in the food supply, improving food retail environments and providing healthier foods in public institutions, and healthier food production. This was reiterated the WHO's recent *Acceleration Plan to Stop Obesity*[18].

The Sustainable Developed Goals are equally a focal point for international governments to create social, economic and environmental future for all, and include several critical elements related to food environments and creating healthy and sustainable food systems[19,20], such as SDG 2 – Zero Hunger, SDG 3- Good Health & Well-being and SDG 12 - Responsible Consumption and Production.

Box 2

This report includes a section for each of the "Processes" and "Impacts" components of the INFORMAS monitoring framework (see **Figure 1**), in addition to a section on digital food environments and equity considerations. The reports for the "Outcomes" components are available on the INFORMAS Canada website: **https://informascanada.com/publications.**

Figure 1. **INFORMAS monitoring framework**



Methods

This report collates the results of multiple independent studies conducted across Canada between 2020 and 2024 by the INFORMAS Canada network and others that have rigorously evaluated elements of food environments. Many of these studies represent unique collaborations established to bring together existing data and collect new data, adapting elements of INFORMAS methodologies to provide a comprehensive portrait of Canadian food environments.

INFORMAS Canada priority food categories

Priority food categories were identified to guide the INFORMAS Canada analyses and increase harmonization of the results across different policy areas and studies. Priority food categories were selected considering multiple criteria, including:

1. categories commonly consumed by people living in Canada[21];
2. categories that included foods that were the largest contributors to energy, sodium, sugar and/or saturated fat in the diets of those living in Canada[21];
3. categories that were easily identifiable and understood by the general public;
4. categories that are important in current nutrition-related policy decisions in Canada.

In addition, we sought to include both categories that comprise foods to avoid (such as candy and confectionery) and foods to promote (such as vegetables and fruits). Potential categories were discussed and prioritized among INFORMAS Canada experts, and selected categories met some or all of these criteria. Table 2 presents the priority food categories (n=17), including examples of food sub-categories and products. All categories have been aligned with those defined in the Table of Reference Amounts for Foods (TRA) in the Canada's Food and Drug Regulations[22]. Priority categories were used or adapted across the different policy modules, as applicable.

INFORMAS Canada food database

The INFORMAS Canada Food database was developed using data sourced from the University of Toronto Food Label Information Program (FLIP)[23] and the Food Quality Observatory (*Observatoire de la qualité de l'offre alimentaire*) at Université Laval[24]. The INFORMAS Canada Food database contains product images and nutritional information of 15,604 packaged food and beverage products included in the INFORMAS Canada priority categories. FLIP data were collected in 2017 from three major Canadian grocery chains (Loblaws, Metro and Sobeys) in the Greater Toronto Area. Observatory data were collected in food retailers either in the Greater Montreal area or in Québec City between 2018 and 2022 (with the exception of pizzas in Ready-to-eat dishes, for which data were collected from across Canada). When products were present in both databases (duplicates), information from the Observatory database was used in the analysis, as it was more recently collected and thus a closer representation of the current food supply. Products were classified according to the INFORMAS Canada priority food categories using the associated TRA food category items[22] (see **Table 2**). In addition to nutritional information, the INFORMAS Canada database includes information on labels and marketing techniques displayed on food packages. The database was used to conduct data analyses related to Food Composition, Food Labelling and Food Marketing modules.

TABLE 1. **INFORMAS Canada priority food categories and the number of prepackaged products in each category**

Food category	Number of products (n)	Examples of foods/beverages included	TRA category
Breads, flatbreads	1,048	Breads, tea biscuits, scones, rolls, buns, pita, tortillas, English muffins, croissants	A1-3, A24-25
Breakfast cereals	486	Puffed and coated/uncoated cereals, granola cereals - fruit and nut type cereals included	C2-4
Dairy and plant-based milks	363	Milk - all fat levels and flavoured, plant-based dairy substitutes, eggnog	D9, D11, D13
Dairy and plant-based yogurts and kefirs	536	Plain, fruit flavored or vanilla yogurt, yogurt in tubs, drinkable yogurt, kefir, plant-based dairy substitutes	D12, D15
Processed cheeses	634	Processed cheese - cream cheese, cheese spread, flavoured cheese, shredded cheese, plant-based dairy substitutes	D1
Processed, deli meat and beef/substitutes patties	1,288	Burger patties, nuggets, bacon, meatballs, sausages, simulated meat products, luncheon meat	L1, L2, L3, L4, L5, L7, L8, L9 S3
Ready-to-eat dishes: pasta/meat/poultry/ rice/egg dishes/pizza	1,348	Prepared and frozen mix entrees (e.g., mac and cheese, lasagna, quiche), meat dishes, poultry mixed dishes, pizzas	N1, N2
Soups	652	Canned, dry, frozen, pre-made soups	T1
Salty snacks and crackers	1,584	Potato chips, corn/rice chips, pretzels, pita chips, melba toast, snack crackers	S1, A11, A12, A13, A21
Candies and chocolate bars	652	Confectioneries, chocolate, candies, gum, mints, gummies, marshmallow, halva	M7, U1, U2, U3, U4, U5, U6, U10, U11, O2
Cookies and granola bars	1,452	All types of cookies, breakfast bars, biscuit, grain-based bars, energy bars	A10, A18, A19, A20
Muffins and pastries	610	Brownies, cakes, donuts, sweet rolls, muffins, toaster pastries, pies, tarts, waffles	A4-9, A14, A17, A22-23
Frozen desserts	500	Ice cream, ice cream bars and sandwiches, ice milk, frozen yogurt, sherbet	E1-4
Sugary drinks (soda and 100% fruit juices and drinks)	1,462	Sugar-sweetened beverages, energy drinks, vitamin water, chocolate beverages, 100% pure juice, sports drinks	B1, B3, B4 B5, J11
Fresh, canned and frozen fruits	470	Canned, fresh, frozen fruits, apple sauces, dried fruit, pickled fruit, fruit relishes	J1-10, J12, M12
Fresh, frozen and canned vegetables inc. potatoes	917	Fresh, frozen, canned non-starchy vegetables with and without sauce, potatoes and starchy vegetables	V1-6, P, V8, V9, V10-12
Fresh or frozen meats	246	Fresh, frozen meats with and without sauce (beef, veal, lamb, pork, chicken, turkey, liver, game meat)	L6, L10
TOTAL	**14,248**		

TRA: Table of Reference Amounts for Foods (TRA) in the Canada's Food and Drug Regulations[22]

Food and nutrient profiling models

There are many ways to classify foods as 'healthier' and 'less healthy' according to different classification systems and nutrient or food profiling models*[25]. This report employs Health Canada's nutrient thresholds for the front-of-package (FOP) nutrition symbol[26] and the proposed nutrient profile model for restricting the advertising of certain foods to children[27] to assess and define the nutritional profile of products (see **Table 2**). Models were selected for each analysis based on the indicators being evaluated, the availability of nutrition information for each analysis, the settings being evaluated, the policy area of interest and the use of nutrient profiling systems in the existing literature. Nutrient profiling models developed based on Canadian food and nutrition policies were used when possible to increase the policy relevance of this work in the Canadian context.

*Nutrient or food profiling is a science used to classify foods based on their nutritional composition, with the aim of assessing their healthiness. Existing methods may evaluate foods by comparing the levels of beneficial nutrients (such as vitamins, minerals, and fiber) with those that should be limited (such as added sugars, sodium, and saturated fats). Other approaches classify foods based on their level of processing.

TABLE 2. **Food and nutrient profiling models used by INFORMAS Canada**

Model and use	Method of classification
Health Canada's thresholds for the display of the front-of-package (FOP) 'high-in' nutrition symbol[28] *(hereafter refer to as **'Health Canada's FOP symbol thresholds'**)* **Purpose of the nutrient profiling model**: To identify prepackaged products that are 'high in' sodium, sugars or saturated fat. The FOP nutrition labelling regulations came into force in July 2022[a]; a transition period ends December 31, 2025.	Sodium, sugars and/or saturated fat levels in prepackaged products are assessed against the nutrient thresholds that are expressed as a percentage of the applicable daily value (DV). In general, for adults and children more than 4 years old, 15% DV or more is considered 'high in' a nutrient and the product would be required to carry a symbol. For products with smaller reference amounts (≤ 30 g or 30 mL), the threshold is 10% DV, and for main dishes (≥ 200 g) the threshold is 30% DV. Some products are fully exempted from displaying a FOP symbol (e.g., products with a display surface < 15 cm^2, individual portions of food intended solely to be served by a restaurant). Conditional exemptions apply for foods with health protection benefits (e.g., fresh fruits and vegetables, milk, whole eggs) and for foods that are important sources of calcium (e.g., cheese, yogurt, kefir 'high in' calcium[a]). Foods may display either no symbols, or a FOP symbol for 1, 2 or 3 nutrients. See Figure 2 below for an image of the FOP symbol. .
Health Canada's Nutrient Profile Model designed to identify products that should not be marketing to children[b,27] **Purpose of the proposed nutrient profiling model**: To identify foods containing free sugars, added sodium or added fat that exceed any of the corresponding 'low in' nutrient content claim thresholds for total sugars, sodium and saturated fat, described in documents as "foods that undermine healthy eating".	Foods containing free sugars, added sodium or added fat are assessed to determine whether they exceed any of the corresponding 'low in' nutrient content claim thresholds[29], which are equivalent to 5% DV for sugars, 6% DV for sodium, and 10% DV for saturated fat. Each nutrient threshold is applied and assessed independently. In general, the serving of stated size and reference amount are used in the assessment, however different assessment sizes are used for foods with a small reference amount (≤ 30 g or 30 mL), and main dishes (≥ 200 g). The proposed nutrient profiling model would not restrict the advertising of foods that do not contain free sugars, added sodium or added fat. Additionally, foods that contain free sugars, added sodium or added fat and that are low in total sugars, sodium and saturated fat, respectively, would not be restricted from being advertised to children.

FIGURE 2. **The FOP symbol for foods high in saturated fat, sugars and/or sodium that will be required on food packages as of January 1, 2026.**

TABLE 2. (cont.) **Food and nutrient profiling models used by INFORMAS Canada**

Model and use	Method of classification
NOVA classification system[30-32] **Purpose of the food profiling model**: To assess the level of processing of foods as an indicator of dietary patterns, quality of diets, and healthiness of the food supply	Foods are classified according to the nature, extent and purpose of their industrial processing and includes 4 groups. — **Unprocessed or minimally processed foods** (Group 1): Foods extracted from nature that are unaltered or minimally altered by physical, biological or chemical processes (e.g., fruits, eggs, plain yogurt, milk). — **Culinary ingredients** (Group 2): Foods derived from Group 1 and used to prepare, season and cook dishes and meals (e.g., oils, butter, sugar and salt). — **Processed foods** (Group 3): Foods having a few ingredients and having undergone processes including preservation or cooking methods, and foods with added salt, oil, sugar or other substances from Group 2 to Group 1 (e.g., cheeses and freshly made breads, canned vegetables or fish, dried pasta). — **Ultra-processed foods** (Group 4): Foods having undergone multiple processes to make them convenient, highly palatable and profitable and made mostly or entirely from substances derived from foods and additives (e.g., soft drink, salty snacks, commercials cakes and pastries, processed meat).

[a] The initial regulations[28] published in the Canada Gazette Part II were used to apply the FOP symbol thresholds to products in the INFORMAS database. In May 2024, a temporary marketing authorization[33] was published in increased the number of dairy products that are exempt from the regulations if they contain more than 5%DV of calcium. These revisions cut-offs were not taken into account in these analyses;

[b] As per Health Canada's policy proposal (which underwent public consultation in Spring 2023 but has not been finalized), foods identified using this model would be restricted from being advertised in a manner that is primarily directed at children under 13 years of age on television and online.

Government Policies and Actions Related to Food Environments

The Food Environment Policy Index (Food-EPI) was developed by INFORMAS to comprehensively assess government policies and actions for creating healthier food environments using a set of standardized, common tools[34]. The Food-EPI has been used in more than 37 countries, as well at the sub-national and municipal or regional level to evaluate the state of food environment policies. Overall, information was gathered on current food environment policies in Canada that are implemented by federal, provincial and territorial governments. Experts were asked to evaluate the state of food environment policies and infrastructure supports that encourage policy implementation compared to a set of established 'Good practice statements.' After assessing this progress, experts developed and prioritized a set of recommendations for the federal government to consider[35]. This process was previously conducted in Canada in 2017[36].

The ratings for federal policies relating to food environments are shown in **Figure 3**. Policies implemented as of January 2023 were meeting good practice statements in 7 of 49 policy areas.

Prioritized recommendations for the federal governments

Five policy recommendations and two infrastructure support recommendations were prioritized by the national expert group.

Policy recommendations

1. Prohibit advertising of less healthy food products and brands through all forms of media to which children may be exposed.
2. Fund a comprehensive and universal national school food program.
3. Implement mandatory targets for sodium, free sugar, and saturated fat for key food categories in packaged and restaurant foods.
4. Invest in inclusive strategies to support the affordability of healthy foods for those with lower incomes.
5. Implement a sugary drink levy on all sugary drinks and invest the revenue in policies to reduce health inequities.

All of the above policies require accompanying monitoring and evaluation strategies. Measures to ensure compliance for both voluntary and mandatory policies are also necessary

Infrastructure support recommendations

1. Revise the Healthy Eating Strategy (2024-2029), with dietary inequities as a central component.
2. Comprehensively monitor diet and nutrition on an ongoing basis, ensuring that marginalized groups are fully represented in the data.

FIGURE 3. **Expert ratings of implementation of 49 specific federal government policy areas in 2023**

Food-EPI Canada provincial and territorial results

Provincial and territorial governments have a unique role to play in supporting healthier food environments, with different roles and responsibilities that their federal counterparts. While there has been some bold leadership from provincial and territorial governments, such as the implementation of mandatory menu labelling in Ontario, a sugary drink tax in Newfoundland & Labrador, and a comprehensive strategy to noncommunicable disease prevention with important measures related to nutrition in Québec, leadership among most provinces and territories in this domain is lacking. Considerable gaps remain between current provincial and territorial policies and what is considered 'good practice' internationally.

Across all provinces and territories, no policies were rated as 'high implementation,' except in Québec, where 2 out of 32 policies received this rating[37]. For policies rated as 'moderate implementation,' the count varied from 2 out of 32 in Yukon to 18 out of 32 in Québec.

Across provincial, territorial and federal governments, experts recommended significant focus on social policy to ensure sufficient access to the social determinants of health, as reducing dietary and health inequities was considered a top priority. Strong social policies that address key determinants of health, such as by increasing income security and access to affordable housing, may not have a nutrition-specific focus, but are a cornerstone of improving dietary patterns and health.

Prioritized recommendations for the provincial and territorial governments

A prioritized list of general policy recommendations and infrastructure support recommendations was developed by the national expert group. The first 5 recommendations are presented below.

Policy recommendations

1. Develop a strategy to address the affordability of healthy foods which may include measures such as a Basic Income Guarantee for all individuals within the province/territory and policies related to affordable housing.
2. Fund a school food nutrition program that is comprehensive and universal in all schools from kindergarten to grade 12 providing resources to establish the required infrastructure support to effectively implement with compliance and monitoring.
3. Prohibit all advertising for less healthy food and beverages (and related brands) in and around publicly owned or managed settings, including public transport infrastructure, public spaces, and within 500m of schools.
4. Update existing school and early childhood education policies and nutrition standards to align with Canada's food guide, requiring reporting mechanisms, incentives for compliance with sufficient support systems to achieve healthy and environmentally sustainable food provision in school settings.
5. Align provincial/territorial food taxes with nutrition recommendations to ensure that nutritious foods are not taxed and nutrient-poor foods are taxed.

Infrastructure support recommendations

1. Develop a provincial/territorial strategy for diet-related noncommunicable diseases that acknowledges the impact of diet-related disease using a coordinated whole-of-government approach to improve population diets, including representation and accountability from each department, and long-term funding commitment to achieve sustained outcomes for physical and mental health.
2. Establish integrated efforts for provincial-level monitoring for policy-relevant diet, health and food-environment outcomes, or conduct provincial-level analysis of key outcomes using available data when possible.
3. Establish concrete health-in-all-policies and equity-in-all-policies processes across government, including explicit consideration of the impacts of policies on population nutrition and health.
4. Increase the capacity (number of staff and their capabilities) of the government to undertake actions related to public health nutrition, including greater diversity and a focus on Indigenous peoples, fostering collaboration and capacity building across all government department and agencies.
5. Establish measurable goals to identify and close the gaps in health outcomes between Indigenous and non-Indigenous communities, and publish annual progress reports and assess long.

Progress since 2017[35]

Some progress was identified since a previous Food-EPI Canada process conducted in 2017[35]. Progress was particularly strong for:

- Providing accessible and understandable front-of-package labelling information.
- Providing updated and comprehensive dietary guidelines.
- Improvements in the use of evidence in policy making.
- Enhanced food environment monitoring.

However, ratings worsened in several key indicators, including:

- Progress on targets and evidence of reformulation for sodium and other key nutrients, including sugar and saturated fat.
- Less demonstrable political leadership in the area of food environments.

Policy implications

Globally, momentum continues for policies to support healthier food environments in efforts to stem increasing rates of diet-related noncommunicable diseases. Canadian governments at all levels will need to continue to take bold leadership positions to limit barriers to healthy eating and fulfill their duty to protect the health of all those living in Canada.

Food Company Actions and Commitments Related to Food Environments

Food companies produce, promote and sell the majority of foods and beverages that feed our society. As such, food industry players have been identified by the WHO and the United Nations as having a role in reshaping food environments to promote health[38,39]. The global food system is increasingly dominated by major national and multinational companies who hold large amounts of power, and thus influence.

Market structure analysis: power within the canadian food system

An analysis of the structure of Canadian food and beverage manufacturing and retailing sectors was conducted in 2022[40]. The study examined 29 food and non-alcoholic beverage manufacturers and grocery retailers with ≥1% market share in 2020/21 in Canada (49% of the packaged food sector, 75% of the non-alcoholic beverages sector, and 86% of the grocery retailing sector). Varying levels of concentration were observed across sectors and markets, according to the four firm concentration ratio (CR4) and Herfindahl-Hirschman Index (HHI). The food retailing sector and, to some extent, the non-alcoholic beverage sector were found to be highly concentrated. Within the packaged food manufacturing sector, concentrated markets (CR4>60 and HHI>1800) included Soups, Ice cream and frozen desserts and Breakfast cereals. Within the beverage sector, concentrated markets included Carbonates, Concentrates, Energy drinks, Ready-to-drink tea and Sports drinks[40]. Results from this analysis demonstrate that few companies held considerable power within the Canadian food system; these companies have the potential to effect great influence on food environments and support healthier diets.

BIA-Obesity Canada 2023

Food companies can independently and voluntarily take actions to improve food environments and support healthier eating. To assess the current policies and commitments of the largest food and beverage manufacturers, retailers and restaurant companies, the Business Impact Assessment – Obesity and noncommunicable disease (BIA-Obesity) tool was developed by INFORMAS to comprehensively assess food company actions across six areas: corporate nutrition strategy; product (re)formulation; nutrition labelling and information; product and brand promotion; product accessibility; and disclosure of relationships.

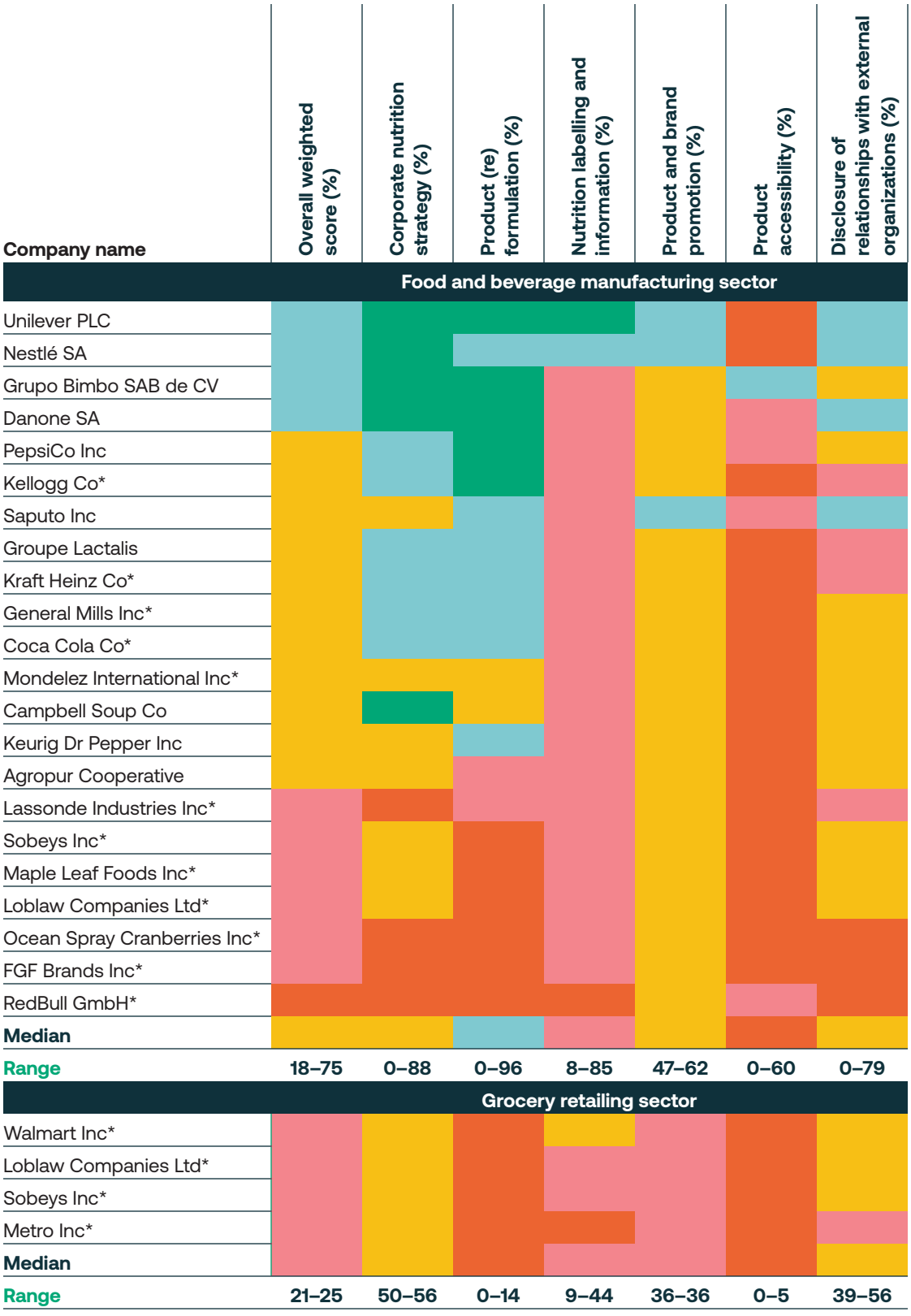
Food manufacturers

The BIA-Obesity assessment was conducted in Canada in 2023[41,42], after an initial assessment in 2018[43]. In 2023, overall scores ranged from 18–75 out of 100 points, with a median score of 49 (see **Figure 4**). Scores were highest in the areas of 'corporate nutrition strategy' and 'product (re)formulation', and lowest in 'product accessibility.' Scores in 2023 represented an increase since a previous evaluation in 2018, largely due to improvements in the industry-wide pledge for food marketing restrictions.

Among recommendations for packaged food and non-alcoholic beverage manufacturers were:

- Set a target for the proportion of sales from healthier products, and publicly report against this target annually at a national level.
- Commit to specific, measurable, achievable, relevant, time-bound (SMART) targets for key nutrients of public health concern (sodium, free/added sugars, saturated fat) and an indicator of overall healthfulness for all products in the company portfolio.
- Avoid using nutrient content claims or general health claims on products required to carry a front-of-package nutrition symbol for foods high in saturated fat, sugars and/or sodium.
- Eliminate the promotion of less healthy food and beverage products and brands on all broadcast and non-broadcast media including digital media to which children up to the age of 18 years may be exposed, and in settings where children gather, including marketing techniques targeting children.
- Develop a policy that healthier products will be available at the same (or lower) price as less healthy alternatives.
- Publish a complete list of relationships with and support for external organizations and all political donations.

FIGURE 4. **BIA-Obesity Canada weighted scores for policies and commitments of the largest food manufacturers and retailers in Canada**



*Company did not participate in the BIA-Obesity validation process, and assessments are based on publicly available information only.

Food retailers

The largest food retailers in Canada are also food manufacturers, and thus recommendations for manufacturers also apply. Additional recommendations for food retailers included:

- Commit to dedicating a minimum amount of shelf/floor space to healthier foods and limit the placement of less healthy foods in high traffic areas including checkouts and end-of-aisle displays.
- Provide comprehensive online nutrition information for all products on all own-brand product websites and on all online grocery ordering and delivery platforms, including nutrition facts tables and symbols for foods high in salt, sugar and saturated fat.
- Ensure promotional activities (e.g., price promotions displayed in catalogues/circulars, and loyalty program rewards) incentivize the purchase of healthier foods over less healthy options.
- Ensure pricing strategies (e.g., size and nature of discounts, multi-buy specials or value-size packaging) incentivize the purchase of healthier foods over less healthy options.

A report for the restaurants sector is forthcoming.

Policy implications

Some companies were making efforts to improve food environments, but this was not consistent across all companies or sectors. Food companies operate within regulatory environments. While some progress has been noted over several years among top performing companies, limited action among many companies suggests that mandatory government policies are likely needed to increase sector-wide action. Ongoing monitoring and evaluation of company actions over time will inform the need for future policy. Improved reporting and transparency among companies will ensure accountability for improving food environments. Future research will evaluate the extent to which the commitments and policies captured in existing analyses are creating healthier food environments in Canada.

Composition of Packaged and Restaurant Foods

The nutritional quality of foods available to consumers directly impacts population diet quality. A healthier food supply in food retail outlets and restaurants can have positive impacts on the healthiness of diets, overall nutritional status and health.

Canada has had government-led voluntary targets for sodium reduction for the packaged food supply since 2012, which were most recently updated in 2020[44,45]. Most studies to date have demonstrated little improvement in the nutritional quality of the food supply over time for sugars[46] or sodium[44,45]. One exception is the reduction of partially hydrogenated oils (industrially-produced *trans* fat) which are now prohibited in the Canadian food supply and have thus been drastically reduced[44,46-48]. This ban applies to foods sold in restaurant and food services[49] but no other regulations exist at the federal level to encourage reformulation by the restaurant sector to reduce the levels of added or total sugars or saturated in foods.

Packaged foods

Foods and beverages (n=14,224 products) from the INFORMAS Canada database were included in the analysis. To examine the nutritional composition of the major food and beverage categories in the Canadian food supply in the current policy context, two nutrient profiling systems developed by Health Canada were applied to the INFORMAS Canada database: 1) the thresholds for the display of the front-of-package (FOP) 'high-in' nutrition symbol[28] and 2) the Nutrient Profile Model designed to identify products that should not be marketing to children[27] (see **Table 2**). These systems were combined to create a nutrient profiling model with three levels: foods that are low in saturated fat, sodium and sugars; foods that are moderately-high in saturated fat, sodium and sugars; and those that are high in saturated fat, sodium and sugar (see **Table 3**).

TABLE 3. Description of food products that are low, moderate and high in nutrients of concern*

	Level of content in nutrients of concern (i.e., saturated fat, sodium or sugars)		
	Low	**Moderate**	**High**
Nutrients of concern thresholds	Food products that are below the 'low in' nutrient content claim thresholds (i.e., ≤ 6% DV for sodium, ≤ 5% DV for sugars and ≤ 10% DV for saturated fat)**	Food products having a nutrient content above the 'low in' nutrient thresholds but below the 'high in' nutrient thresholds (i.e., >6% but <15% for sodium, > 5% but <15% for sugar and >10% but <15% for saturated fat)***	Food products that are above the 'high in' nutrient thresholds (i.e., ≥15% DV for sodium, sugar and saturated fat*)
Would be restricted to be marketed	No	Yes	Yes
Would carry a FOP symbol?	No	No	Yes

*Nutrients of concern refer to sodium, sugars and saturated, which are consumed in excess by individuals in Canada and are associated with a higher risk of noncommunicable diseases. Those nutrients are thus considered «of concern» from a public health perspective.

DV: daily value ; ** based on proposed thresholds for restrictions on marketing to children.
*** exceptions for small package sizes and main dishes are described in Table 2.

A large proportion of the products commonly available in Canada were high in nutrients of concern. Overall, 64% of products were high in one or more nutrients of concern, and slightly more than one in 10 products (12%) were low in the nutrients of concern. From a policy perspective, this means that two-thirds of packaged products included in this sample are going to carry a label warning that foods are high in nutrients of concern when this becomes mandatory in 2026 (see **Table 4**).

Candies and chocolate bars (96.2%), **Muffins and pastries (93.1%)**; and **Fresh or frozen meats (90.7%)** were the categories with the highest proportion of products that were high in nutrients of concern, whereas **Fresh, canned and frozen fruits (43.9%)**; **Fresh frozen and canned vegetables (41.2%)**; and **Dairy and plant-based milks (39.7%)** were categories that included the greatest proportion of products with a better nutrition profile (i.e., low in all nutrients).

Almost one-third of products examined were high in each of sodium, sugars and saturated fat. Overall, 40.1% of products were high in one nutrient, 22.2% were high in two nutrients, and 2.6% were high in all three nutrients.

Overall,

64%

of products offered were high in sodium, sugars or saturated fats, and only

12%

had a low content in all of those nutrients.

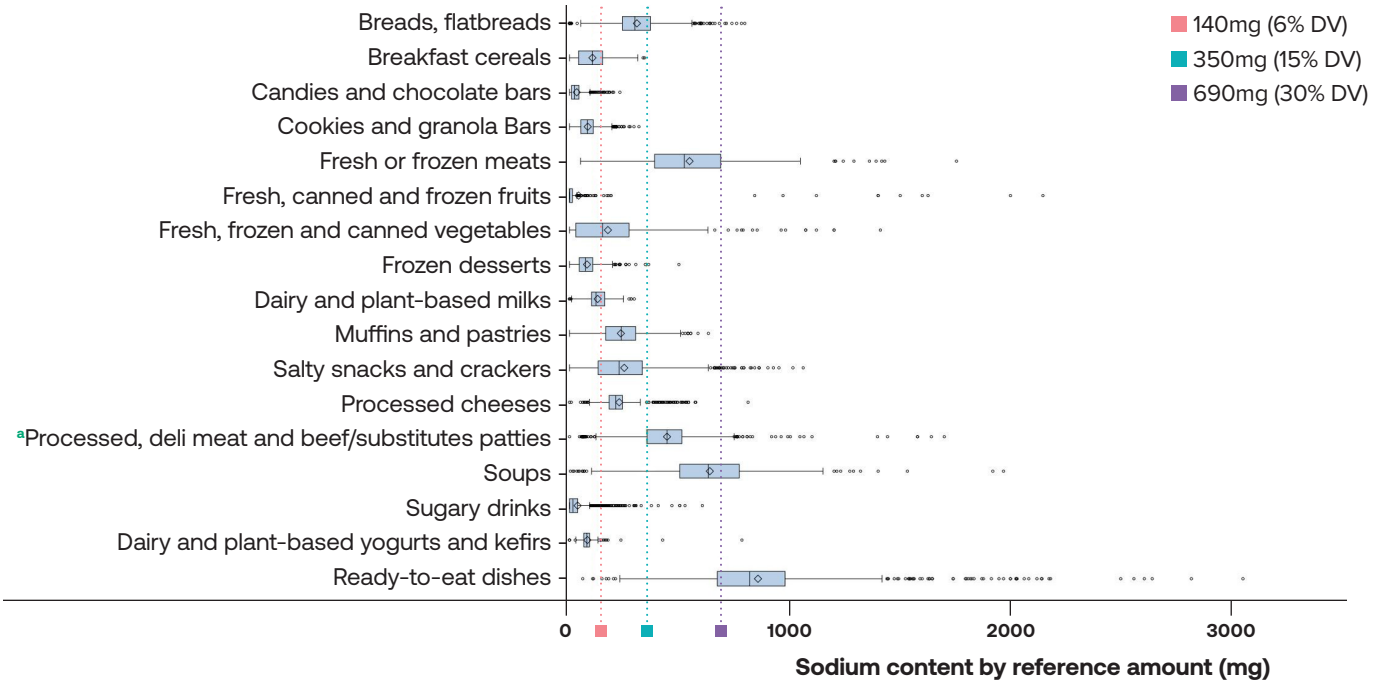
TABLE 4. **Percentage of products that are low, moderate and high in nutrients of concern**

FOOD CATEGORY[a]	Number of products[b], n	High in nutrients of concern, %				Moderately high in nutrients of concern[c], %	Low in nutrients of concern, %
		Sodium	Sugar	Saturated fat	Any		
Breads, flatbreads	1,044	37.9	1.3	6.5	42.8	52.1	5.1
Breakfast cereals	486	3.3	20.4	11.3	30.7	60.9	8.4
Candies and chocolate bars	652	0.0	77.9	64.7	96.2	1.5	2.3
Cookies and granola bars	1,452	0.3	49.9	54.5	70.5	26.7	2.0
Fresh or frozen meats	246	83.7	15.9	44.7	90.7	2.4	6.9
Fresh, canned and frozen fruits	467	1.9	36.0	3.9	41.1	15.0	43.9
Fresh, frozen and canned vegetables	916	28.1	0.2	3.0	28.5	30.3	41.2
Frozen desserts	499	0.6	83.6	72.6	90.0	9.4	0.6
Dairy and plant-based milks	363	3.0	28.9	10.2	33.3	27.0	39.7
Muffins and pastries	605	23.5	73.6	72.9	93.1	6.9	0.0
Salty snacks and crackers	1,582	31.9	2.8	15.7	42.9	46.5	10.6
Processed cheeses	633	27.3	0.2	13.0	37.1	62.1	0.8
Processed, deli meat and beef/substitutes patties	1,287	83.9	0.6	51.6	89.0	8.4	2.6
Ready-to-eat dishes	1,348	77.0	4.7	39.6	81.3	16.0	2.7
Soups	651	86.8	7.5	20.3	86.9	5.4	7.7
Sugary drinks	1,458	1.0	65.1	1.8	66.2	9.0	24.8
Dairy and plant-based yogurts and kefirs	535	0.3	68.2	8.8	71.2	12.0	16.8
TOTAL	**14,224**	**29.5**	**29.0**	**29.1**	**64.1**	**24.3**	**11.5**

a These results do not take into account the Marketing Authorization to Permit a Lower Calcium Threshold for Exemptions from the Requirement for Prepackaged Products to Carry a Nutrition Symbol in the Case of Cheese, Yogurt, Kefir and Buttermilk announced in May 2024[33];
b Missing data for variables required for the analyses resulted in a smaller sample size;
c In theory, percentages in this column should be equal, for a specific category, to 100% minus the sum of the percentage of products that display 'Any FOP symbol' and the percentage of products that are low in nutrients of concern, but they differ from this calculation because of rounding.

There is considerable variation in content of nutrients of concern between, but also within, food categories (see **Figure 5**, unpublished data). The high level of variation underscores that alternatives lower in nutrients of concern exist within each food category, thus highlighting the opportunity to improve the nutritional quality of foods in Canada. **Figure 5** demonstrates the distribution of products above and below the 'low-in' and 'high-in' cut-offs. When comparing across graphs, the majority of categories were typically high in one nutrient, but some categories like Muffins and pastries and Frozen desserts were high in multiple nutrients (unpublished data).

FIGURE 5. **Sodium, sugars and saturated fat content per reference amount by food categories**



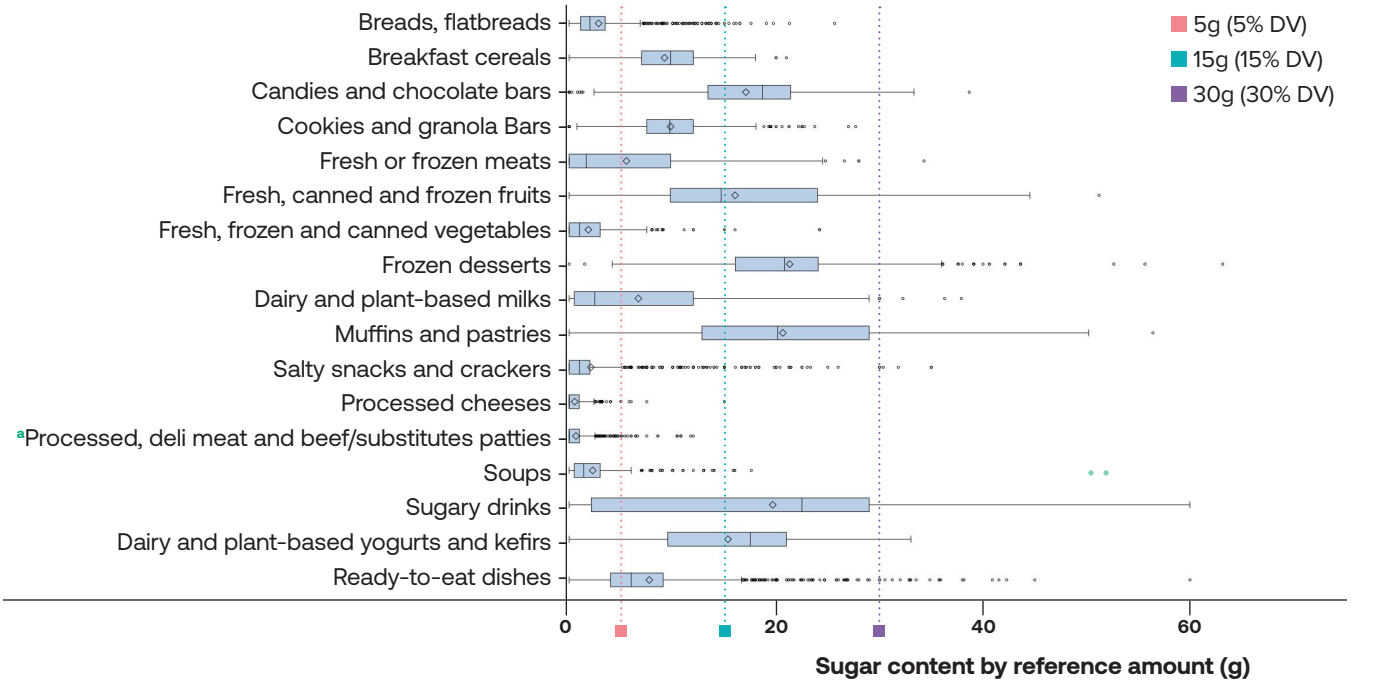
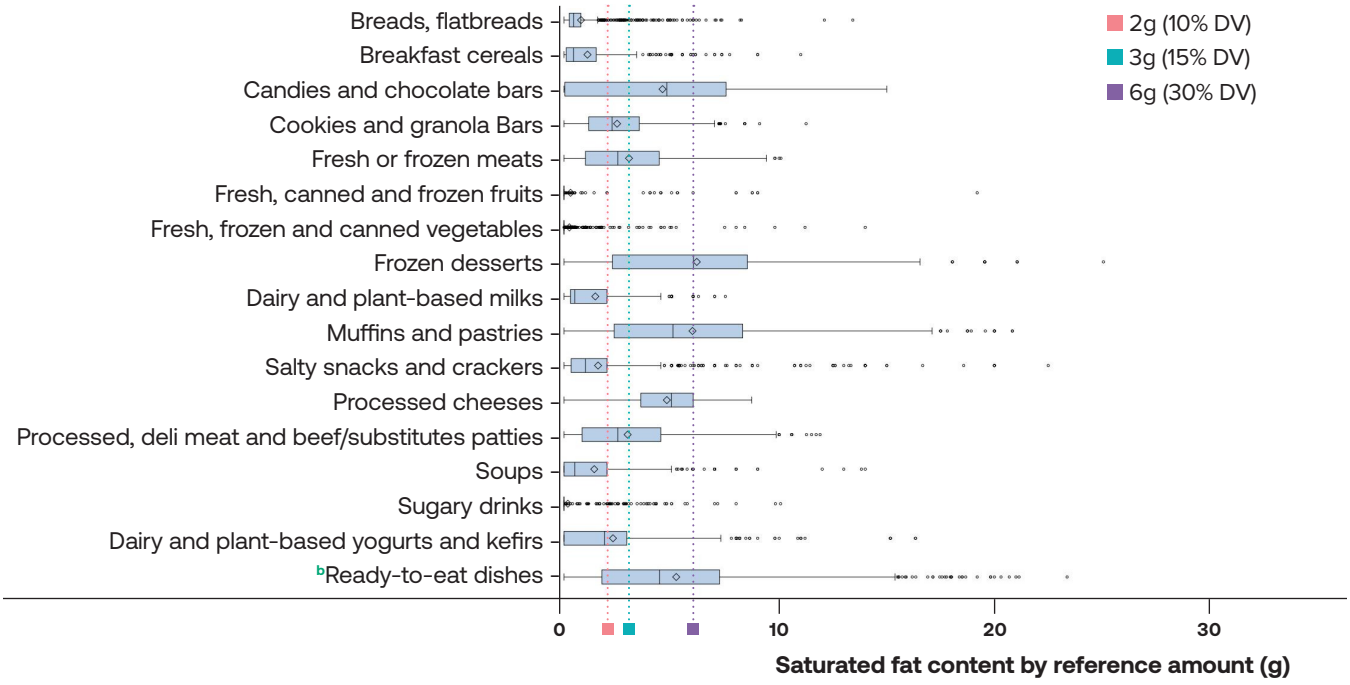


FIGURE 5. (cont.) **Sodium, sugars and saturated fat content per reference amount by food category**



Note: Boxes represent the interquartile range (25th to 75th percentile) and the line inside the box is the median; the whiskers represent the minimum and maximum values (non-outlier range); and the dots represent outliers. The purple line represents the 'low in' nutrient content claim thresholds in Health Canada's proposed nutrient profiling model equivalent to 6% daily value (DV) for sodium, 5% DV for sugars and 10% DV saturated fat. The green line represents the nutrient thresholds in the FOP nutrition labelling regulations equivalent to 15% DV for sodium, sugar and saturated fat for foods with a reference amount of > 30 g or 30 mL and to 30% DV for foods with a reference amount of ≥200g.
a n=One extreme value was removed; **b** n=Two extreme values were removed.

Previous research has used different methods to assess the nutritional quality of the Canadian food supply. Studies using various other other classification systems indicate minimal improvements in the quality of the Canadian food supply between 2013 and 2017 among the largest food manufacturing companies,[50] and that approximately 50% of the food supply was of poorer nutritional profile[51,52]. Lastly, research has applied the 'high in' thresholds to identify that, overall, 66% of products purchased in Québec were high in sodium, sugar or saturated fat[53]. Almost all products in the Ready-to-eat soups, Pizzas and Sliced processed meats categories exceeded the 15% DV (30% DV for pizzas) thresholds for sodium. Processed cheeses, Sausages and Pizzas had the largest number of products with high saturated fat, and Cookies, Granola bars and Breakfast cereals had the largest number of products with sugar[53]. Therefore, these categories may be a priority for reformulation

Restaurant foods

A recent study examined the nutritional quality of 18,760 menu items, categorized as Starters, Entrées, Sides, Desserts, and Beverages, collected between 2020 and 2021 from Canadian restaurants with ≥20 outlets nationally[54]. In the study, average level of sodium, sugars and saturated fat per serving exceeded the recommended 15% percentage daily values (%DV) threshold, defined as 'a lot' in Health Canada's nutrition labeling regulations[55]. Results showed several extreme values: the %DV was as high as 69% for the sodium content and 50% for the saturated fat content for Starters, and as high as 39% for the sugar content for Beverages.

Per serving,

- mean energy content was 483 kcal/serving (24% DV of the 2000-kcal recommended daily energy reference level)[55]
- mean sodium content was 867 mg/serving (38% DV of the 2300-mg daily value for sodium)[56]
- mean total sugars content was 17 g/serving (17% DV for the 100-g daily value for sugars)[56]
- mean saturated fat content was 7.4 g/serving (37% DV of the 20-g daily value for saturated fat and trans fatty acids)[56]

Another study assessed the nutritional quality of menu items from chain restaurants in 2020 by applying Health Canada's FOPL threshold, and found that 77% of menu items would display a 'high in' FOP nutrition symbol, if regulations were extended to the restaurant sector[57]. Among menu items, 52% were 'high-in' sodium, and 24% and 47% were 'high-in' total sugars and saturated fat, respectively[57].

Policy implications

Changes in the food supply can fundamentally shift population-level intakes of nutrients of concern[58,59]. Modelling studies have shown that changes in intake that could result from improvements in the quality of the food supply may result in significant health impact and savings in healthcare costs[60,61]. Together, these findings highlight the considerable potential for reformulation by the food industry to improve the healthiness of packaged and restaurant foods in the Canadian food supply and thus contribute to improved diet quality in Canada.

While voluntary sodium reduction targets can support industry progress, countries such as Argentina[62] and South Africa[63] have opted for mandatory sodium limits different on food categories. Other countries such as Australia[64], the United Kingdom[65] and New York City[66], in the United States have also developed voluntary targets for other nutrients of concern such as sugars and saturated fats for key food categories. There are a range of food environment policies, such as interpretative front of package nutrition labelling and restrictions on marketing of unhealthy foods, that are also known to encourage the food industry to improve the nutritional quality of their food[67,68].

Labelling of Packaged Foods

Food packaging is one of the most widely used sources of information for consumers about food products. Governments implement labelling policy to regulate the nutritional information, marketing and claims appearing on food packaging to ensure their consistency and accuracy and prevent misleading consumers. Nutrition claims highlighting nutrition-related characteristics are often used by the food industry as marketing tools, and may or may not indicate more healthful products overall.

Nutrition labelling in Canada is federally regulated by Health Canada[69]. Recent regulations passed in 2022 will require food manufacturers to display nutrition symbols on the front of prepackaged foods 'high in' sodium, sugars and saturated fat as of January 2026 when thresholds for these nutrients are exceeded[70,71]. Nutrient content claims and some types of health claims on foods are also regulated (see **Table 5** for a description)[72].

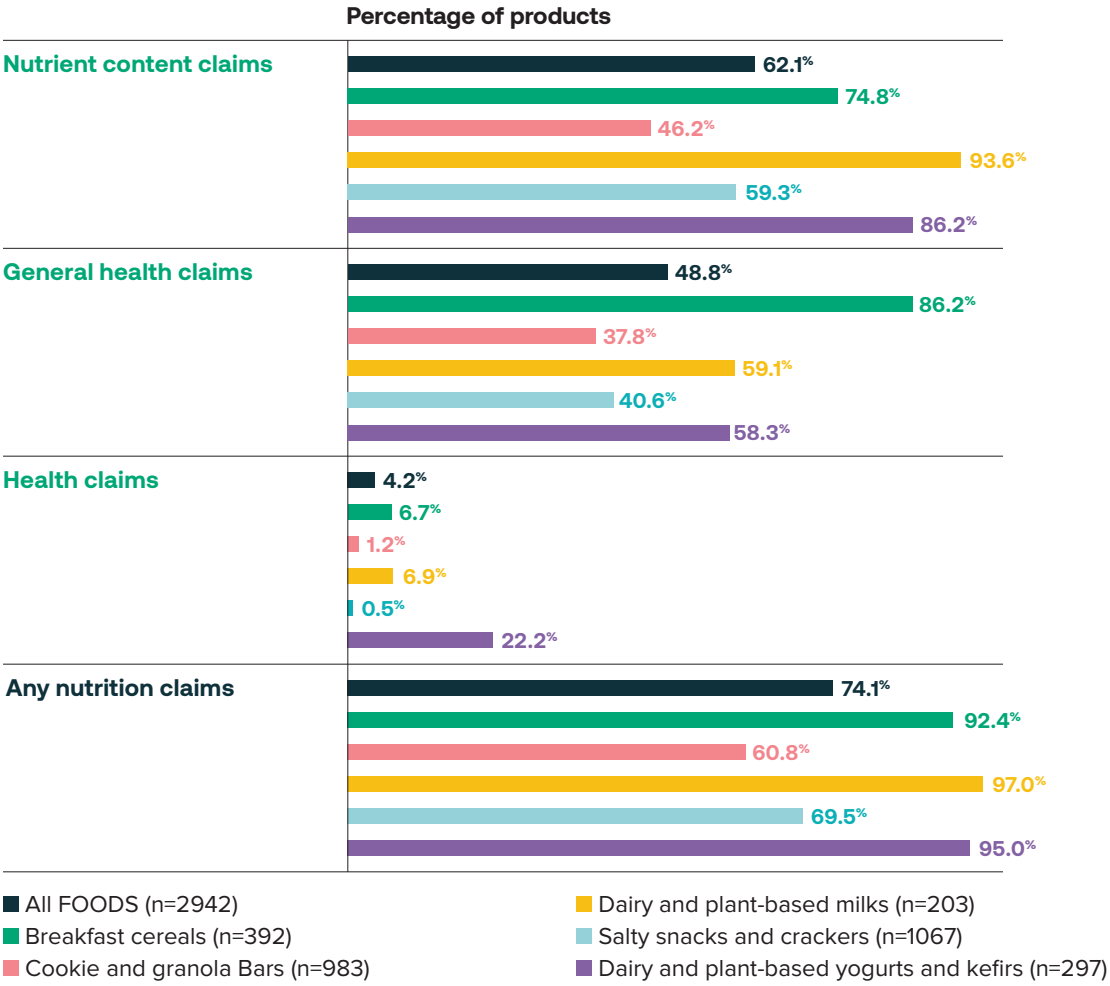
A subsample of 2942 products were assessed in the INFORMAS database using Food Quality Observatory data from five categories (Breakfast cereals; Dairy and plant-based milks; Salty snacks and crackers; Cookies and granola bars; and Dairy and plant-based yogurts and kefirs). Food- and nutrition-related label components located anywhere on the package were identified and classified based on an adapted taxonomy of health-related food labelling developed by INFORMAS[73] that were aligned with Canadian labelling regulations[69,72,74-79]. Nutrition claims were categorized as Nutrient content claims, Health claims, and General health claims (see **Table 5**). The healthiness of foods was evaluated using Health Canada's thresholds for the display of the front-of-package (FOP) 'high-in' nutrition symbol[28] (see **Table 2**)[28], to indicate which foods were high in sodium, sugars and saturated fat and would therefore be required to carry a symbol as of January 2026.

TABLE 5. Description of the types of nutrition claims and associated examples

Type of claims	Description	Example
Nutrition claim	**Include nutrient content claims, health claims and general health claims**	
Nutrient content claim[69,74]	Include claims relative to the amount of a nutrient and claims comparing the nutrient levels and/or energy value of two or more products	— "Source of fibre" — "No sugar added" — "Low in saturated fat"
Health claim[69,74,75]	Include claims relative to structure or body functions and disease risk reduction, including therapeutic claims	— "Oats contain fibre which is good for your heart" — "A healthy diet rich in a variety of vegetables and fruit may help reduce the risk of some types of cancer" — "Oat fibre helps lower cholesterol"
General health claim[80]	Include claims relative to health-related ingredients and to nutrient-specific systems	— "100% whole grains" — "The consumption of [XYZ yogurt] which is low in fat is part of a healthy diet" — industry-led FOP symbols and logos

Nutrition claims were displayed on 74.1% of all products sampled, most commonly nutrient content claims (on 62.1% of products), followed by general health claims (48.8%) and less frequently, health claims (4.2%) (see **Figure 6**, unpublished data). Nutrition claims appeared most frequently on Dairy and plant-based milks (97.0% of products), Dairy and plant-based yogurts and kefirs (95.0%), and Breakfast cereals (92.4%). Of products that carried a nutrient content claim, claims most commonly referred to calories (21.5% of all products), followed by fibre (17.2%), trans fat (15.5%) and vitamins and/or minerals (14.8%). Overall, 23.8% of products featured a claim highlighting low levels of sodium, sugars, and/or saturated fats. Of those, 31.5% were high in at least one nutrient of concern.

FIGURE 6. **Percentage of products that feature various types of nutrition claims, by food category**



Data show that products that would display at least one FOP carry the equivalent of 1.6 (SD: 1.7) nutrition claims (see **Table 6**, unpublished data). On average, Breakfast cereals had the highest mean number of nutrition claims for food products that would carry a FOP symbol for sugars (3.1; SD: 2.8) and saturated fat (3.7; SD: 1.9).

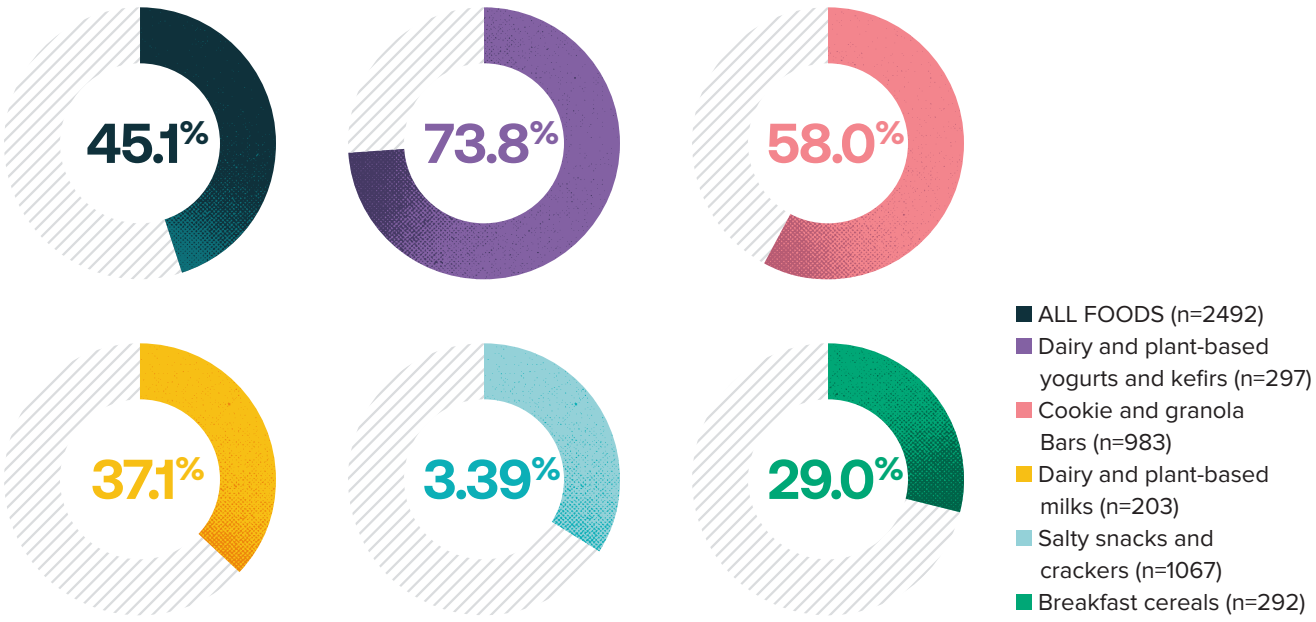
TABLE 6. **Mean number of nutrition claims on products that would display at least one FOP symbol for sodium, sugar, saturated, by food category**

	Mean number nutrition claims on products that would carry a FOP symbol for:			
Food category	**Sodium**	**Sugars**	**Saturated fat**	**≥1 nutrient(s)**
	n (SD)	n (SD)	n (SD)	n (SD)
Breakfast cereals	2.4 (2.8)	3.1 (2.8)	3.7 (1.9)	3.3 (2.2)
Cookie and granola Bars	1.5 (0.7)	1.0 (1.3)	3.7 (1.9)	1.0 (1.3)
Dairy and plant-based milks	2.3 (1.5)	2.7 (1.5)	2.9 (1.2)	2.8 (1.5)
Salty snacks and crackers	1.6 (1.9)	2.0 (1.8)	0.9 (1.4)	1.5 (1.8)
Dairy and plant-based yogurts and kefirs	3.0 (-)[a]	2.1 (1.3)	2.1 (1.1)	2.1 (1.3)
All foods	**1.7 (1.9)**	**1.6 (1.6)**	**1.9 (1.6)**	**1.6 (1.7)**

SD: Standard deviation; [a]Only one product would carry a FOP symbol for sodium.

Of all products carrying a nutrition claim, 45.1% would have to display a FOP symbol indicating they were high in sodium, sugars and/or saturated fat (see **Figure 7**). Products that carried a nutrition claim were less likely to be required to display a 'high in' symbol for sodium, sugar or saturated fats (OR=0.30, 95%CI: 0.25-0.36), indicating that products that carried claims were less likely to be high in these nutrients of concern. Nutrient content claims (indicating high or low amounts of other nutrients) were found on 51.5% of products that would display a FOP symbol for sodium, 54.1% for sugars and 37.6% for saturated fat.

FIGURE 7. **Percentage of products carrying nutrition claims that would also display at least one FOP symbol, by type of claim**



Policy implications

The results from this research show that, in 2026, when prepackaged food products will be required to include symbols indicating high levels of sodium, sugars and saturated fat, many products may simultaneously carry multiple nutrition claims highlighting healthful 'positive' product qualities and a 'high in' symbol warning consumers that the product is high in a nutrient of concern. Situations where consumers see conflicting information are likely to result in consumer confusion, undermining the desired effect of facilitating healthy choices. There is international precedent for policies that limit nutrition claims for products that must carry health warnings: Argentina, for example, has implemented a regulation that does not allow health or nutrition claims on foods carrying FOP symbols[81].

These data provide an important baseline to monitor the change in the use of different marketing messages, including use of nutrition claims by food manufacturers once compliance with the FOP labelling regulations is required in January 2026. Evidence from other countries indicates increases in the use of marketing and claims after mandatory FOP policies are implemented[82]. Monitoring the use of nutrition and other claims on packaging of products in the Canadian food supply will ensure that labelling regulations provide consumers with clear nutrition messaging.

74%

of products featured nutrition claims, of which

45%

would be required to carry a FOP symbol indicating they are high in sodium, sugars and/or saturated fats.

Unhealthy Food Marketing

Children's exposure to pervasive and powerful marketing of energy dense and low nutritional quality foods in a wide variety of settings is a well-established reality[10,83,84]. Food marketing influences children's food preferences, purchase requests and dietary patterns[85-88]. Young children are particularly vulnerable to the effects of food marketing, as they are unable to distinguish between program content and advertising content[89,90]. It is now widely recognized that unhealthy food and beverage marketing contributes to childhood obesity[85-88,91].

Since the launch of the Health Canada's Healthy Eating Strategy in 2016, food marketing has been an active policy topic in Canada[92-94], but regulations have not yet been published as of January 2025. Food marketing to children in Canada remains largely self-regulated by the food and beverage industry[95], most recently by the Code for the Responsible Advertising of Food and Beverage Products to Children[96]. The exception is in the province of Québec where the Consumer Protection Act prohibits all commercial advertising (including for food) directed at children less than 13 years of age on the radio, on television, on the web, on mobile phones, in print, on billboards, and on promotional objects[97]. Advertising expenditures are one way to demonstrate the magnitude of advertising for food and beverages in Canada. In 2019, food and beverage advertising expenditures by food companies in Canada across 57 selected food categories was estimated at $628.6 million CAD, and almost 90% of total expenditures were for less healthy products[98].

Numerous research efforts have been implemented to monitor food marketing as part of a comprehensive monitoring framework to assess the food marketing environment in Canada in a wide variety of media and settings[99,100]. Research has assessed the nature, extent and persuasive power of food marketing using various monitoring approaches that have been developed and refined by Health Canada over time[101-104]. To assess the healthiness of products advertised, most research conducted in Canada presented below has used either the *Health Canada's Nutrient Profile Model* to identify products that should not be marketed to children (published in 2018[105] and revised in 2023[27]) or *Health Canada's Food Classification Protocol* for monitoring marketing to children[101]. Both tools use Health Canada's proposed thresholds for nutrients of concern for marketing restrictions (see **Table 2**). The various studies of food marketing have used different labels to describe the healthiness of products or brands varied (e.g., "of (or not of) concern from an advertising/health perspective", "healthy/unhealthy", "healthier/less healthy", "restricted (or not restricted) from advertising to children"). For clarity purposes, we have uniformly used the label "healthier/less healthy" throughout this section. To assess the marketing techniques that appeal to children*, Canadian research presented below used Health Canada's indicators to track marketing techniques across marketing media and settings[103,104] unless otherwise cited.

*Marketing techniques that appeal to children are designed in a way that are attractive to children without necessarily targeting children directly, whereas techniques directed or targeted at children explicitly target children as the primary audience.

Television

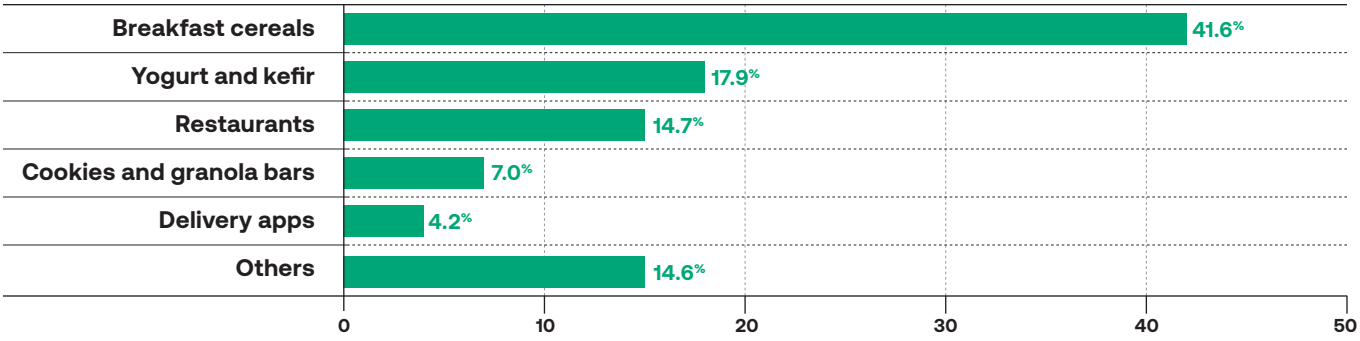
Food or beverage ads broadcasted on popular children's television channels

Canadian children aged 7–11 y spend on average just less than one hour per day watching TV, and children aged 12–17 y reported spending on average one and a half hours per day watching TV (including movies)[106,107], making television an important contributor to advertising exposure for children.

Advertising was monitored on three child-appealing television channels in Ontario (Disney Channel, Teletoon and YTV) from 06:00 to 24:00 for six days (three weekdays & three weekends) in November 2022 using an adapted version of the global INFORMAS protocol[108,109]. All advertisements (ads) were identified and coded into 1) food or beverage ad, or 2) non-food or beverage ad. Information from ads were extracted and coded for the presence of marketing techniques that appeal to children[110] and for the healthiness of products advertised[105].

Food and beverage advertising made up 11.2% of the total ads, with a total of 1446 food and beverage ads on the child stations. The overall rate of food and beverage advertising was 4.5 ads/hour/station. The three most frequently advertised food categories were Breakfast cereals (41.6%), Yogurt and kefir (17.9%), and Restaurants (14.7%) (see **Figure 8**). Of food and beverage ads, 93.6% were considered less healthy. The most frequently occurring marketing techniques in food and beverage ads were *appeals to health or nutrition* (66.5%), *appeals to fun or cool* (54.1%) and *child themes* (53.5%) (unpublished data).

FIGURE 8. **Percentage of food and beverage advertisements on child stations for the top 5 food categories in November 2022**



Food and beverage ads viewed by children and adolescents on television in a self-regulatory environment

Data on television viewership and advertisements airing from January to December 2019 obtained from Numerator were analyzed for 57 selected food and beverage categories broadcast on 36 television stations in Toronto (where food advertising is self-regulated by the food industry)[111]. Exposure to food and beverage ads was calculated using gross rating points (GRPs), which is calculated by dividing the total impressions or exposures to an ad by the total population of the media market that was exposed to that ad and multiplying by 100. The healthiness of products in advertisements was assessed[105] and a content analysis identified the presence of marketing techniques appealing to children[110]. The study included both child appealing stations (Disney, YTV and Teletoon) and more generalist stations such as CTV, SportsNet Ontario and Global.

In 2019, over the entire year, children (2-11 y) viewed 2334 food and beverage ads on television whereas adolescents (12-17 y) viewed 1632 ads (27% fewer ads compared to children). The top five stations through which children had the most exposure to food and beverage ads were Citytv, YTV, CTV, SportsNet Ontario and Global. For adolescents, CTV, YTV, Citytv, Global and TSN4 were the stations for which exposure was the greatest. The study found that, for both children and adolescents, the greatest exposure was from primarily generalist stations (with the exception of YTV). The most frequent food categories viewed by children on ads were Restaurants (51.3%), Snacks (9.1%) and Breakfast food (8.4%), whereas Restaurants (49.8%), Snacks (9.2%) and Dairy (8.4%) were the most viewed by adolescents. Overall, 91.3% of ads broadcasted were for less healthy food products compared to 8.7% for healthier products.

On television stations, **4.5 ads for unhealthy food were aired per hour per station** on children's TV channels

Children aged 2-11 y **saw** an estimated **2334 ads** and **adolescents** aged 12-17 y saw an estimated **1632** ads over an entire year on TV.

91% of all the ads viewed by children were for **less healthy foods**.

Comparison of food and beverage ads viewed by children in a self-regulated vs government-regulated environment

Television viewership and advertisements data were similarly used to compare exposure of children ages 2–11 y in Toronto, where advertising to children is self-regulated by industry, and Montreal (in both French and English media markets), where the province has banned commercial advertising directed at children[112]. Average exposure through the top 10 most popular stations for children was similar across markets, but was lower on child-appealing stations in the Montreal French market compared to the Toronto and Montreal English market (see **Figure 9**). Fast food was always in the top three food and beverage categories that were advertised on both type of stations and in all markets, representing between 36.1% and 43.7% of food ads. Depending on the type of stations and markets, Nonfast-food restaurants, Snacks, Candy and chocolate, Dairy and Breakfast foods were also among the top categories advertised.

More than 90% of all the ads viewed by children were for less healthy foods (see **Figure 10**). Among the top 10 most popular stations for children, the most frequently used marketing techniques in food and beverages ads were *calls to action* (used in 31.1%-37.8% of ads, depending on the markets), *use of child-appealing products* (used in 27.9%-42.1% of ads) and *use of health appeals* (30.4% of ads in the Montreal French market and 31.1% of ads in Toronto). For the Montreal English market, the third most frequently used technique was the use of *child-appealing special effects* (used on 31.8% of ads).

FIGURE 9. **Average number of food and beverage advertisements that children viewed in 2019 (ads per child per year) on the top 10 most popular stations for children and on child-appealing stations**

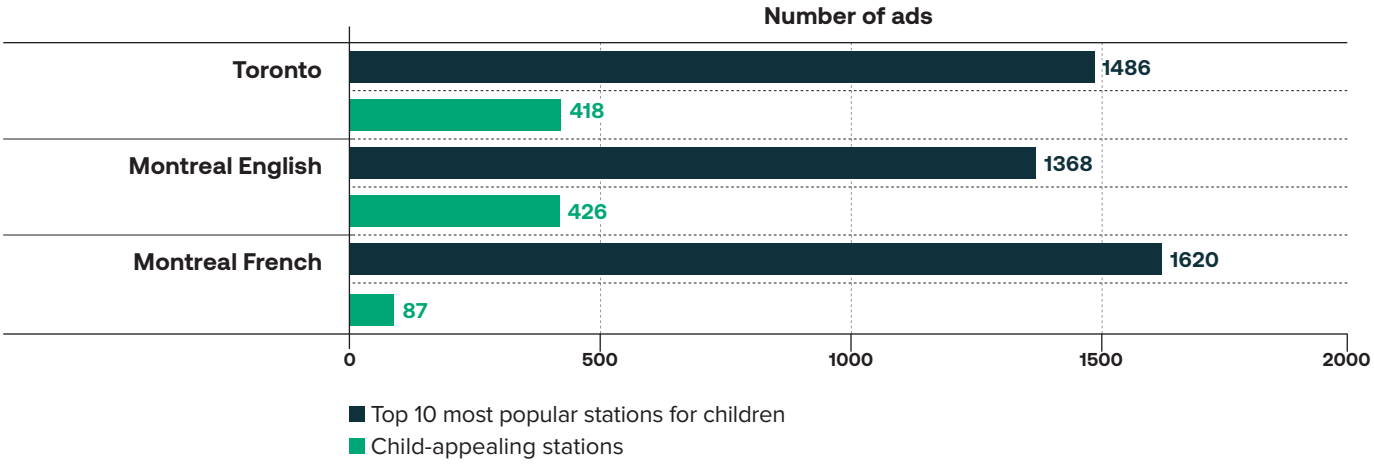
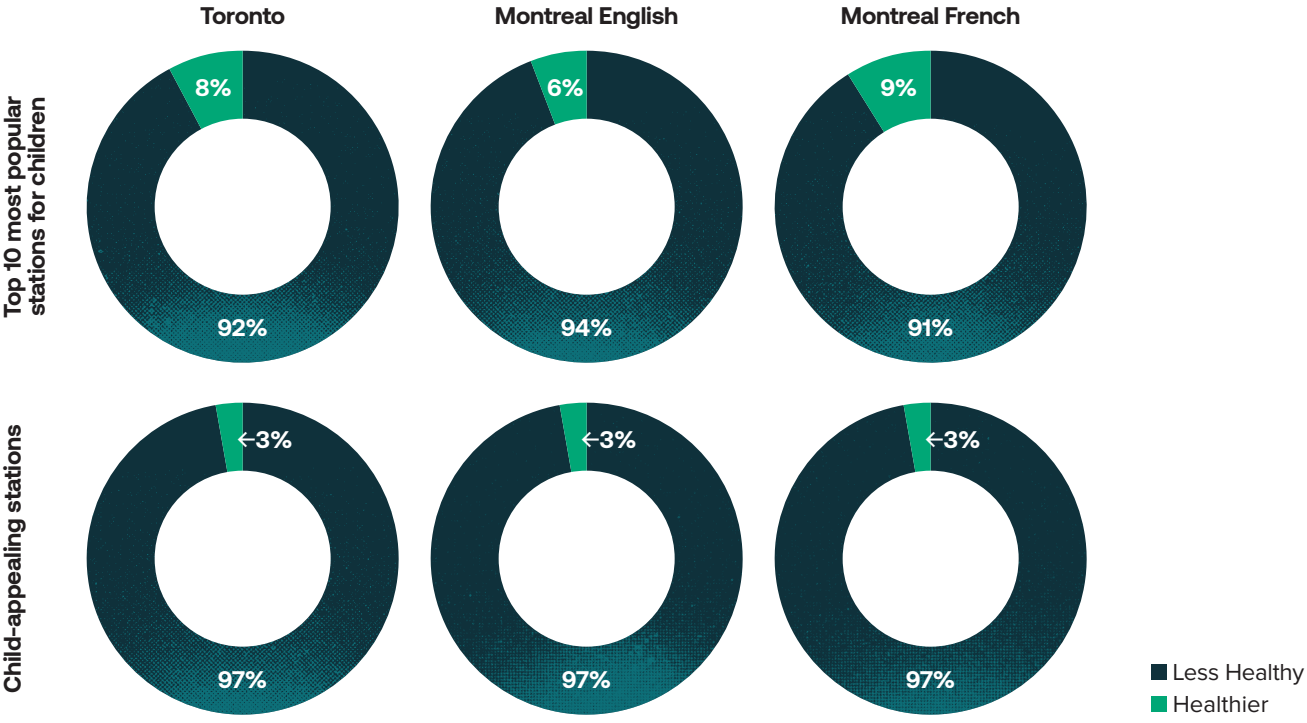


FIGURE 10. **Percentage of food advertisements to which children were exposed that were healthier and less healthy products or brands**



Digital

In 2022, 49% of Canadian children aged 7–11 y and 87% of adolescents aged 12–17 y were using a mobile phone[113]. Adolescents spent on average 127 (±113) min/day surfing the internet[114], excluding time spent playing video or computer games and texting and messaging. Food companies are increasingly shifting their ads expenditures from traditional to digital media[115] and are using multiple marketing techniques and various online platforms (social media, food company websites) for food marketing.

Youth exposure to food brand and product ads on their mobile devices

In 2022–2023, screen capture data were collected from a convenience sample of 100 English/French children (n=50, aged 6-11 y) and adolescents (n=50, aged 12-17 y) from across Canada[116]. Children and adolescents were asked to use their smartphone/tablet for 30-minutes as they normally would, and screens were recorded. A content analysis of each food advertisement was conducted to assess marketing techniques[110] and healthiness of advertised brands or products was examined[105]. Children and adolescents also reported the time usually spent on digital devices to extrapolate exposure to food ads in a regular day. Average reported time spent (hr:min) on digital devices per day was 2:31 for children and 3:59 for adolescents on a typical weekday, and 3:42 for children and 5:35 for adolescent on a typical weekend day.

Overall, the rate of exposure to food advertising through digital devices was 1.96 ads/child/30-min (4067 ads/child/year) and 2.56 ads/adolescent/30-min (8301 ads/adolescent/year). The most frequent food categories in ads viewed by both children and adolescents included Fast food restaurants (21.7%), Chocolate/candy (10.5%), Savoury snacks (10.5%), Regular soft drinks (9.3%), and Food delivery services/grocery stores (7.7%) while other food categories, such as Fruits/vegetables, were rarely observed. Overall, 88.8% of both brands and products advertised to children and adolescents were less healthy. The top three marketing techniques viewed by both children and adolescents were *appealing graphic effects* (19.6%), *songs/music* (12.6%) and *calls to action* (10.5%).

Food marketing by influencers on social media

Promotion of food products or brands by popular influencers on social media is another way companies market food. A recent Canadian study examined food marketing by the nine most popular social media influencers amongst children on YouTube, Instagram and TikTok across a 12-month period in 2021-2022[117]. Among these top influencers, there was one food marketing instance for every 0.7 posts on YouTube, every 10.2 posts on TikTok and every 19.3 posts on Instagram. Overall, 81.8% of products and 86.9% of brands promoted by influencers on these platforms were classified as less healthy. Fast food restaurants (20.1%), Regular soft drinks (13.1%), Snacks (11.5%) and Candy and chocolate (10.9%) were the most frequently marketed food categories[117].

Children were exposed to an estimated **4067 ads/child/year** and adolescents were exposed to **8301 ads/adolescent/year** through their digital devices

89% of both **brands and products** advertised seen by children and adolescents on their digital devices were **less healthy**

Food packaging

Although often neglected in regulations, food packaging is among the top sources of children's exposure to food marketing[118].

A subsample of 5687 products in the INFORMAS Canada database from 5 categories in the Food Quality Observatory data (Breakfast cereals; Dairy and plant-based milks; Salty snacks and crackers; Cookies and granola bars; and Dairy and plant-based yogurts and kefirs) were assessed for instances of food marketing on product packages. Data were collected in 2018-2022 in food retailers either in the Greater Montreal area or in Québec City. Researchers assessed the presence of marketing techniques[104] and the healthiness of food products advertised[27].

About one third of products displayed child-appealing techniques (33.3%), with the highest rates for Breakfast cereals (45.5% of products featuring child-appealing techniques), Dairy and plant-based milks (44.5%), and Cookies and granola bars (35.5%; unpublished data). *Appeal to fun or cool* (40.7%), use of *child-appealing visual design* (35.8%) and use of *branded characters* (32.6%) were the most common marketing techniques used on product packages. The vast majority of products with marketing techniques that were attractive to children (90.9%) were less healthy (unpublished data).

33% of products **displayed child-appealing techniques**

Among products with child-appealing packaging, **91%** were **less healthy**

Food stores and restaurants

Food retail environments, such as grocery stores and restaurants, are key locations that influence food purchasing[119]: roughly three out of four food purchasing decisions are made in grocery stores[120]. Restaurants also represent an important source of food purchases: in 2019, 54% of Canadians ate out or purchased take out food at least once per week[121].

In 2021 and 2022, 2140 restaurants and 813 stores in eight provinces and two territories in Canada were audited using the Canadian Marketing Assessment Tool in Stores and Restaurants (CAMAT-S and CAMAT-R)[122]. This sample represents a combination of three studies: 1) the Three-city Study (n=405 restaurants and 175 food stores in Saskatoon (Saskatchewan), Kitchener (Ontario) and St. John's (Newfoundland and Labrador)); 2) the Six-city Study (n=1,605 restaurants, 588 stores in Vancouver (British Columbia), Calgary (Alberta), Winnipeg (Manitoba), Ottawa (Ontario), Québec City (Québec) and Halifax (Nove Scotia)); and 3) the Northern Study (n=130 restaurants, 50 stores in Whitehorse (Yukon), Haines Junction (Yukon), Carcross (Yukon) and Yellowknife (Northwest Territories)). Photos of marketing instances, including instances of exterior ads, were analyzed to explore child-directed marketing techniques. Differences in marketing indicators across stores in neighborhoods of different area-level equity status[123] were also analyzed. The healthiness of products[101] and the presence of marketing techniques was assessed[103].

Exterior food advertisements present around food retailers largely advertised unhealthy products. On food or beverage ads around food stores, 68% of products advertised were considered less healthy, and this percentage increased to 92% for products advertised on ads around restaurants. Exterior advertisements around stores most commonly featured Sugar sweetened beverages (32.0%), Frozen treats (19.1%) and Ready-to-eat prepared meals (8.0%), and restaurant exterior ads predominantly showcased Restaurant food (55.3%), Sugar sweetened beverages (16.4%) and Frozen treats (6.9%). The marketing techniques used on exterior ads of stores and restaurants were similar, mostly commonly using *child themes/visual design* (stores: 39.4%; restaurants: 36.9%), *branded characters* (stores: 8.6%; restaurants: 3.4%) and *other cartoon characters* (stores: 8.1%; restaurants: 2.6%). Restaurants engaged in food marketing directed at children using various techniques, such as offering combo meals that included less healthy drinks with the purchase of a children's meal (68.7%), automatically including a less healthy beverage with the purchase of a children's meal (49.3%) and providing activities for children to complete while waiting for their meal (18.6%), which can encourage the consumption of products of lower nutritional quality.

The findings differed by area-level socio-economic status. Among stores included in the Six-City Study, retailers with 'junk food power-walls' were more common in less racialized neighborhoods (59%) compared more racialized areas (45%); however, there were fewer retailers with junk food power-walls in higher socio-economic status neighborhoods (40%) compared to stores in lower socio-economic status neighborhoods (60%)[124]. Additionally, the use of island displays featuring marketing techniques targeting children or teens was slightly more common in stores within higher socio-economic neighborhoods (61%) than in those in lower socio-economic areas (57%)[124].

FOOD STORES

65.7% of stores **had exterior food or beverage ads**

Of exterior ads that contained an image of a food or non-alcoholic beverage, **68%** were for **less healthy products**

RESTAURANTS

58.9% of restaurants **had exterior food or beverage ads**

Of exterior ads that contained an image of a food or non-alcoholic beverage, **92%** were for **less healthy products**

49.3% of children's meals **automatically included a less healthy beverage**

Notes: Data on the percentage of ads that contained an image for less healthy products, the percentage of ads for less healthy products, the most frequently advertised products for stores and techniques related to menu design and menu offerings for restaurants are specific to the Six-City Study only (n=1,605 restaurants and n=588 stores).

Recreation and sports centres

Recreational facilities provide access to physical activity to community members, including children, which make them an ideal venue to model and promote health and encourage healthy eating habits..

In 2022, a total of 134 recreation and sports centres (n=92 urban area and n=42 in rural area) in nine provinces in Canada were audited using the FoodMATS tool[125], of which 85 (63.4%) also completed a survey that assessed sponsorship[126]. Of the sample, 90% (n=120) of facilities offered food and beverages through either vending (beverage, snack, candy) or concessions. In addition, 456 sport areas, comprising ice rinks, pools, weight/cardio room and dance/yoga studios, 465 vending machines and 102 concessions were audited across all facilities. Areas were assessed for instances of promotions* for all types of food and beverage products, brands, and retailers, including grocery stores, agriculture/food producers, fast food and sit-down restaurants, and brands for sugar-sweetened beverages, sports drinks, and water. The healthiness of products[101] and marketing techniques were assessed[103].

Among facilities audited, 88.8% had at least one instance of food promotion, with a median number of 11.5 (IQR: 5.0-22.3) by facility. The vast majority of recreation and sports centres (86.3%) audited were marketing foods, brands or retailers that were primarily less healthy. Of all instances of food promotions, 42.2% were located in sports areas (e.g., on score boards, on walls/boards in sport field/rink/area, spectator seating area), 16.3% in concessions and 41.6% throughout the rest of the facilities (e.g., vending machine facades with product and brand images, digital signs on televisions, decals on doors or windows, outside signs). A total 2576 instances of food promotion were counted across all facilities, and 9.6% of promotion instances were classified as child-appealing. The most frequently featured techniques were *child themes/ visual design* (78.4%), *commercial branded, infrastructure, displays or furniture* (77.1%) and *appeals to fun and cool* (48.0%). Overall, 36.5% of facilities had at least 1 food and non-alcoholic beverage sponsor, with a median number of sponsors of 2.0 (IQR: 1.0-3.8] per facility.

889% of facilities **had ≥1 instance(s) of food promotion**

86% of promotion instances were for **products, brands or retailers** that were **less healthy**

37% of facilities **had ≥1 food and non-alcoholic beverage sponsor**

Notes: *Instances of food promotions encompass strategies designed to increase the visibility and appeal of a particular food product or brand including, but not limited to sales promotions, sponsorship, in-store displays and celebrity endorsement.

n=583 instances could not be classified for healthiness because the products or brands were not found in the classification resources, or were out of scope (e.g., grocery stores were not classified using this system).

Schools

Children spend an average of six to seven hours per day in schools[127], making school food environments that encourage healthier dietary patterns a priority.

In 2023-2024, 112 primary and secondary schools were recruited in small (n=31), medium (n=42) and large (n=39) population centres*[128] across Canada. School representatives completed an online self-reported survey on various components of school food environments, including school food policies and the marketing of less healthy foods, beverages and brands in schools[129]. In the survey, less healthy drinks were described as sugary drinks or drinks with artificial sweeteners (like diet or regular pop), fruit drinks, sports drinks or energy drinks. Less healthy foods were described as ultra-processed foods (like potato chips, chocolate bars, or ice cream), foods that are fried (e.g., fries that are deep fried), foods that have higher levels of salt, sugar and/or saturated fat, and less healthy brands were described as a company that sells mostly less healthy foods and drinks, but that may also sell some products that are considered healthy. For example, Coca Cola sells mostly sugary drinks, but also sells water, and would therefore be considered a less healthy food brand.

Few instances of less healthy food advertisements were reported in the schools sampled. Overall, only a small proportion of schools (17%) self-reported the presence of advertisements for less healthy foods, beverages or brands in their school. More specifically, schools reported such advertising in the cafeteria (6%), in the school outside the cafeteria (5%), on vending machines (6%), on recycling bins or garbage cans (4%), around athletic fields, on sport uniforms or on gym equipment (5%). The majority of schools (58%) reported having a policy that restricted or banned advertising of less healthy foods, beverages or brands within the school environment. Among schools with these policies, only 11% of schools reported the presence of unhealthy food or brand advertising in their school, compared to 28% for schools without such policies (p=0.034).

There were, however, other instances of marketing of less healthy foods in schools. More than half of schools (57%) reported having fundraising activities that included less healthy foods, beverages and brands, and only 37% of schools indicated having a policy that restricted fundraising to healthier or non-food items. Nearly half of schools (49%) reported using less healthy foods as rewards for good student behaviours or academic performance. The use of educational materials that were sponsored by corporate entities associated with the food or beverage industry was also reported by 23% of schools.

58% of schools had a **policy that restricts or bans advertising of less healthy foods, beverages or brands** on school grounds.

*As per Statistics Canada, a population centre has a population of at least 1000 and a population density of 400 persons or more per square kilometre, based on population counts from the current Census of Population. All areas outside population centres are classified as rural areas. Small POPCTRs have a population between 1000 and 29,999; medium POPCTRs has a population between 30,000 and 99,999; and large POPCTRs has a population of 100,000 or more[128]

Hospitals

Considering that the primary mission of hospitals is to promote, maintain and restore health, these institutions provide an opportunity to model healthy consumer food environments and support healthier dietary patterns.

In 2023-2024, 152 hospitals recruited across all provinces in Canada completed an online self-reported survey on various components of hospital food environments, including hospital food-related policies for consumer-related activities (and not including in-patient food services) and marketing of foods in hospitals[130]. The definitions of less healthy drinks, less healthy foods and less healthy brands aligned with the definition used for schools (see Schools section, page **53**).

Overall, less than a third of hospitals (28%) had a policy that restricted or banned advertising of less healthy foods, beverages or brands on hospital grounds, and 27% of hospitals reported the presence of advertisements for less healthy foods, beverages or brands on their premises. More specifically, hospitals reported advertising for unhealthy foods, beverages or brands in the cafeteria (4%), in the hospital outside the cafeteria (5%) and on vending machines (23%).

Overall, 20% of hospitals reported using less healthy foods, beverages or brands during fundraising activities. Only 16% of hospitals reported having a policy aiming to reduce the use of less healthy food items as employee recognition or awards, and nearly a third of hospitals (31%) reported using such form of recognition or reward. In addition, only 22% of hospitals reported having a policy restricting multibuy promotions (e.g., 2-for-1 deals), which are known to lead to greater purchases[131,132]. The use of educational materials that were sponsored by corporate entities associated with the food or beverage industry was reported by 8% of hospitals.

28% of facilities had **policy that restricts or bans advertising of less healthy foods, beverages or brands** on hospital grounds

22% of facilities had **policy that restricts price promotions** (2-for-1 deal) **on less healthy food items**

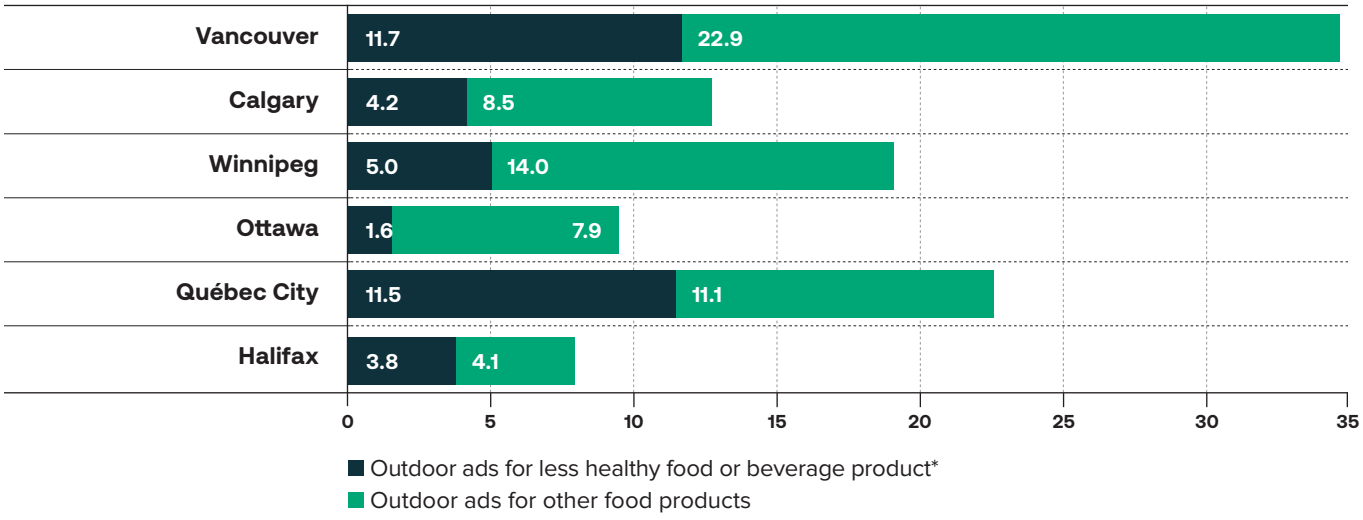
Outdoor settings

Outdoor food marketing is a strategy used globally to promote products. Outdoor advertising along school routes and around schools are an important source of children's exposure to unhealthy food marketing[133–135].

In 2022, photos of food marketing instances (n=2585) within a 1-km radius from schools were collected in cities and surrounding rural areas of six provinces (Vancouver (BC), Calgary (AB), Winnipeg (MB), Ottawa (ON), Québec City (QC), Halifax (NS))[136]. Each city consisted of 24 school neighbourhoods, except for Ottawa and Québec City, which had 25 school neighbourhoods. The healthiness of foods and beverages[101] was assessed and marketing techniques used on outdoor ads were identified[103].

Outdoor food marketing around schools was prevalent in all six cities, to a greater extent in Vancouver and Québec City, and to a lesser extent in Halifax and Ottawa (see **Figure 11**). Within a 1-km radius from schools, the average number of outdoor ads varied from 7.9 ads per school neighbourhood in Halifax to 34.6 ads in Vancouver. Food-related marketing was mainly for less healthy foods and beverages (64.5% of food ads, overall). In all cities with the exception of Québec City, the most frequently advertised food and non-alcoholic beverage categories were Fast-food/sit-down restaurants (37.4% overall), Sugar-sweetened beverages (19.9% overall) and Frozen treats (10.5% overall). The most frequently used marketing techniques were *child products or convenience products* (39.4% of ads, overall), followed by *techniques evoking a sense of urgency, a seasonal or limited time offer* (18.4%) and *price promotion or discount* (13.1%).

FIGURE 11. **Average number of outdoor food ads within a 1-km radius from schools**



*Includes Chocolate or candy, salty snacks, cookies, frozen treats, restaurant food, ready-to-eat meal, and sugar sweetened beverages. Excludes alcohol.

Potential exposure to food marketing of a child in a day

The unique monitoring of food and beverage advertising to children and adolescents being conducted in Canada across various media and settings makes it possible to estimate the amount of food ads children might be exposed to. Using estimates from the above cited research on the number of ads and promotions that children of different ages may be exposed to on food packaging, television, using their digital devices, in outdoor settings around schools, around retail and restaurant environments, in schools and in recreation centers, was used to demonstrate the potential exposures for two fictive children, Michaela (9 years old) and Marco (14 years old), in their day-to-day routines.

Michaela is 9 years old and lives in Vancouver. She wakes up, enjoys her cereal, and smiles when she sees her favourite cartoons character on the cereal box (**~ 1 ad**). Before heading to school, she watches television for an hour, where she sees **5 ads** for unhealthy foods and beverages. On her 1 kilometer walk to school, she passes **10 outdoor ads** for fast foods, soft drinks and frozen treats. At lunch, she buys a chocolate bar from a school fundraiser (**1 ad**) and eats in the cafeteria. On the way home, she stops at the grocery store with her mom, where she sees a big billboard in the parking lot for a new ice cream flavor and a sugary drink that looks refreshing! (**2 ads**). As she is walking through the aisles, she begs her mom to buy some of the cookies and granola bars with fun characters they see (**6 products with child-appealing techniques**)! After dinner, Michaela spends around three hours on her digital device doing homework and browsing the Internet, where she sees **12 more ads**, including some for new deals from her favorite fast food restaurant and a new, tasty flavor of chips.

Over the course of her day, Michaela will have been exposed to an estimated **37 food or beverages ads per day, mostly for less healthy products**.

Marco just celebrated his 14th birthday, and lives in Québec City. He rolls out of bed in the morning and immediately checks his socials for 10 minutes (**5 ads**). After a quick bowl of cereal (that features a famous soccer player, of course) (**1 ad**), he heads to school, stopping at a corner store on the way to pick up a chocolate milk, where there is a big ad for a refreshing-looking sports drink on the door (**1 ad**). Over the course of the day, he sneaks a peak at his smartphone for 10 minutes to scroll his TikTok and Instagram feeds, seeing around 20 TikTok post and 40 Instagram posts (**for a total of 4 ads**). At lunchtime, Marco and his friends grab a lunch at a fast-food restaurant just one block away from his school. Shortly before arriving, they come across a billboard advertising a brand-new delicious meal combo (**1 ad**). They already know what they'll be ordering for lunch! At his soccer practice after school, he sees ads in the changing room and around the soccer field (**10 ads**). That night, Marco is snacking on a bag of chips advertising a fun new contest (1 ad) while simultaneously doing homework and checking his social media (**12 ads**) and watching TV for a couple of hours (**9 ads** over the 2 hours).

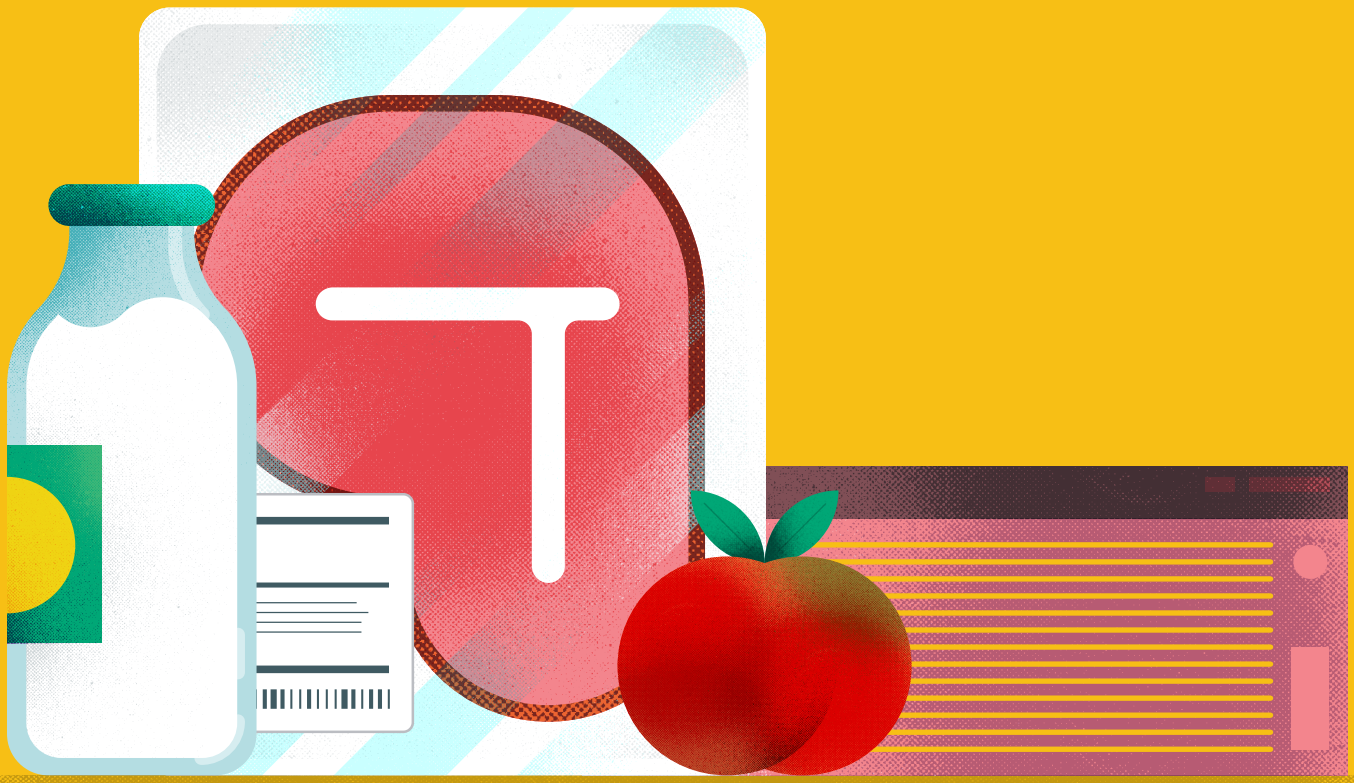
Over the course of his day, Marco will have been exposed to an estimated **44 food or beverages ads per day, mostly for less healthy products**.

Policy implications

Based on empirical data, the results above show that children in Canada are exposed to food and/or brand marketing throughout their daily life, even at times in public settings where we would expect the promotion of healthy food environments and encouragement of healthy eating habits.

The volume of marketing of less healthy foods to which youth in Canada are exposed highlights the need for overarching regulatory restrictions on marketing of less healthy foods to children. As per the most recent WHO recommendations, the optimal approach to protect this vulnerable group from harmful impact of food marketing is the implementation of a comprehensive mandatory policy restricting marketing of foods high in nutrient of concerns to children of all ages, in media and settings where children may be exposed to food marketing, and which uses an appropriate nutrient profiling model to identify less-healthy foods[10]. A strong policy should also include restrictions of brand advertising, and additional media, settings and techniques such as food outlets, in and around schools, community settings, food packaging, point-of-sale and sponsorship. The stringent marketing-related policies proposed in the United Kingdom demonstrate one such approach, where all marketing of foods high fat, salt or sugar are proposed to be subject to a complete watershed ban on TV during hours when children might be exposed (5:30 am to 9:00 pm)[137] and where a complete prohibition of paid-for food advertising will be imposed on digital media[138]. Restrictions on the marketing of less healthy foods at point-of-purchase in stores also apply[139]. Strong policy should also include a proactive compliance monitoring strategy (i.e., not exclusively based on complaints).

Food Provision in Public Sector Settings



Publicly funded settings such as schools, hospitals and recreation centres have been identified as key intervention points to promote healthy food environments[34,140,141]. These settings have an opportunity to lead by example by ensuring that the foods served, sold and marketed in their institutions contribute to healthy diets and align with national dietary recommendations. Public food procurement initiatives have emerged as an important strategy to promote healthy diets in public settings[140,142], while also supporting sustainable food systems and diets[142,143].

In Canada, the *Food guide friendly initiative*[144], which targets post-secondary institutions and recreation settings, aims to support publicly-funded organizations in providing and promoting nutritious foods and beverages promoted by Canada's food guide. This initiative is developing principles to guide organizations in their actions towards a food environment supporting healthy food choices. Until recently, Canada was the only G7 country without a national school feeding program. In April 2024, the Government of Canada announced the creation of a National School Food Program and Policy[145], in collaboration with provincial, territorial and Indigenous partners, to complement existing programs in the provinces and territories guided by a set of principles and key objectives[145]. Given that health and education in Canada are largely decentralized to the provinces and territories, most jurisdictions have adopted mandatory or voluntary food policies or general dietary guidelines for schools, recreation centres, and/or healthcare settings (except for Nunavut), although implementation has been found to be lacking[146].

Schools

In 2023–2024, 112 primary and secondary schools recruited in small (n=31), medium (n=42) and large (n=39) population centres* across Canada completed an online self-reported survey on various components of school food environments, including the types of food services available in schools, food and beverage availability, and school food policies[129]. Schools sampled had at least one type of food service available, including school food programs (80% of schools), cafeterias (41%), a food order-in or catering system (38%), vending machines (22%) and snack shops (20%).

Most schools (89%) had either developed their own written school food policy or followed their provincial/schools board's school food policy or guidelines (see **Table 7**). In addition, 63% of schools indicated that they followed standards that defined what foods and beverages were allowed to be sold.

*As per Statistics Canada, a population centre has a population of at least 1000 and a population density of 400 persons or more per square kilometre, based on population counts from the current Census of Population. All areas outside population centres are classified as rural areas. Small POPCTRs have a population between 1000 and 29,999; medium POPCTRs has a population between 30,000 and 99,999; and large POPCTRs has a population of 100,000 or more[128]

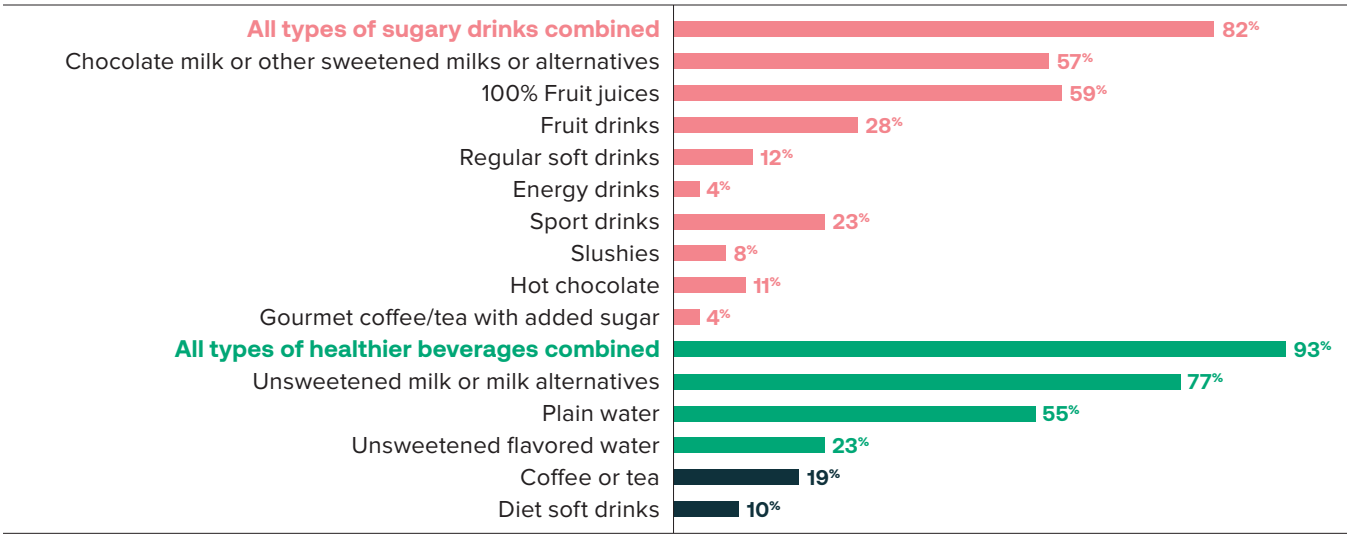
TABLE 7. **Percentage of schools that have a written school food policy**

	N[a]	%
Developed or follow a written school food policy	**95**	**88.8**
Developed its own written school food policy	58	54.2
Follow provincial/school board's food policy or guidelines	37	34.6
No written school food policy	**12**	**11.2**
Somewhat follow provincial food policy or guidelines	11	10.3
Do not follow provincial food policy or guidelines	1	0.9

[a]N=5 schools that answered "Don't know" or "Refuse to answer" to questions measuring the indicators above, excluded from calculated percentages

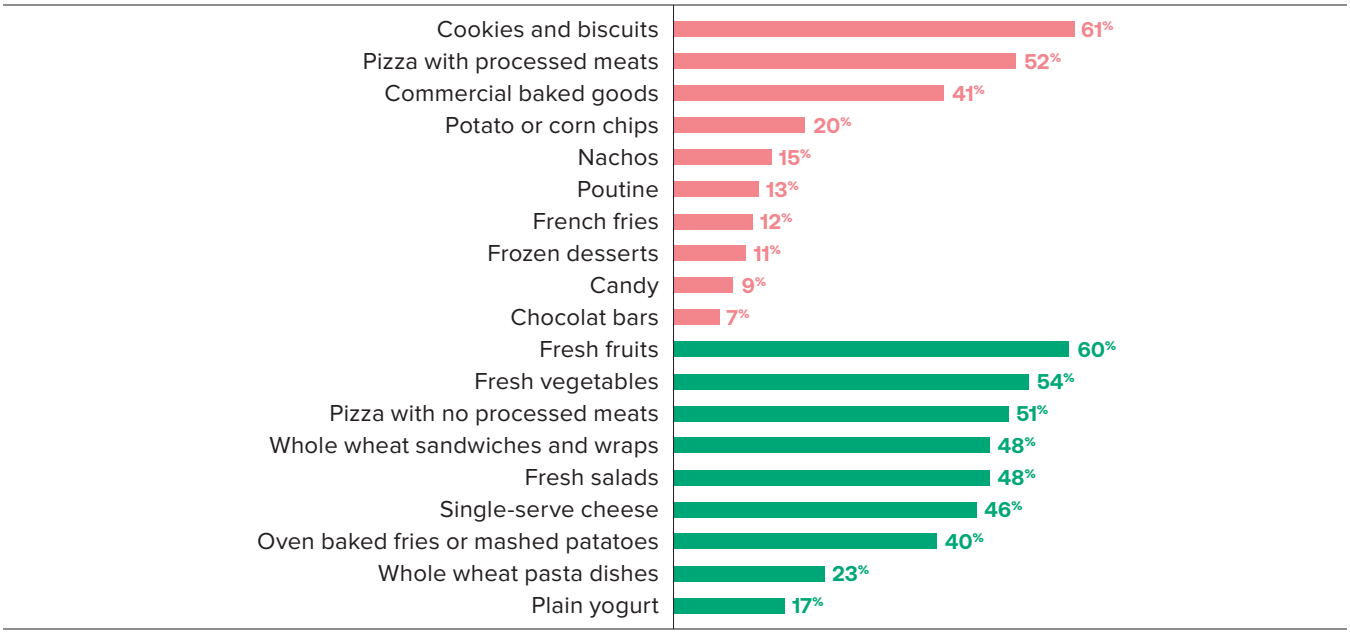
Schools were asked if they sold a list of beverage and food options (see **Figure 12** and **Figure 13**) which were classified as healthier if they broadly aligned with Canada's food guide and less healthy if they did not (see **Figure 12** and **Figure 13**). Among schools that reported selling beverages on a regular basis (n=83), only 14% offered exclusively healthier options. Of the drink options queried, schools reported on average 2.1 (SD: 1.9) sugary drink options (i.e. beverages containing added or free sugars) available on a regular basis (out of 9 potential options). Among schools that reported offering foods on a regular bases (n=92), only 14% offered exclusively healthier options. Just over half (51%) of schools offered whole grain products, and only about 55% offered both fresh fruits and vegetables on a regular basis. Schools sold on average 2.4 (SD: 2.1) less healthy food options (out of 10 potential options) and 3.9 (SD: 2.5) healthier food options (out of 9 potential options).

FIGURE 12. **Percentage of schools that reported selling or serving the following beverage options on a regular basis (≥1 /week)**



[a]Beverages containing added or free sugars; [b]Beverages containing little to no added or free sugars, sweeteners, sodium, saturated fats or caffeine.

FIGURE 13. **Percentage of schools that reported selling or serving the following food options on a regular basis (≥1 /week)**



[a]Foods that are ultra-processed, fried or that have high levels of sodium, sugar and/or saturated fat; [b]Minimally processed or whole foods, with limited amounts of added sodium, sugar and/or saturated fat.

Almost all schools (93%) reported having at least one type of school food program that provided food to students in place, with breakfast programs being the most prevalent (see **Table 8**). Overall, many schools (63%) reported having at least one type of free and universal school food program (program that is accessible and free for all students from all grades, and available daily for the entire school year). While most breakfast programs (81%) and snack programs (67%) were free and universal, only 34% of lunch programs were free and universal. Among schools that reported having a school food program (n=104), 88% indicated that at least one of their programs followed nutritional guidelines, and 78% of them measured the impact of at least one of their programs (e.g., participation rates, number of meals served, academic performance).

TABLE 8. **Prevalence of schools with breakfast, lunch and snack programs in place**

	N[a]	%
Schools that had at least one school food program	**104**	**93.3**
Breakfast program	81	72.3
Lunch program	67	59.8
Snack program	70	62.5

[a]Schools that answered "Don't know" or "Refused to answer" to questions measuring the indicators above, excluded from calculated proportions (%).

Even though most schools sampled reported that they had one or more school food program(s) in place, these results need to be interpreted with caution. It is important to note that overall participation rates for this study were low (approximately 10%), and that participation bias may play a role in these favourable outcomes, as schools that already had vibrant school food initiatives and programs may have been more inclined to participate in this study. Furthermore, the survey did not allow researchers to thoroughly evaluate the quality of the programs offered, meaning that some programs might only be available upon demand, may be underfunded and/or may not be appropriately adapted to student cultures or providing healthier options. Further in-depth research is warranted.

Hospitals

In 2023-2024, a total of 152 hospitals from all provinces in Canada completed a self-reported online survey examining retail food environments including food and food service availability and food policies[130]. This study did not examine meals served to patients in hospitals.

Hospitals had various type(s) of food services available, including cafeterias (93% of hospitals), vending machines (71%), snack shops or local café (31%), restaurant chains or franchises (11%), pre-order from in-patient menus (3%), gift shops (2%) and catering (2%). Foods in cafeterias were mainly produced by hospital staff (for 80% of hospitals), with few from third-party vendor (5%); for 15% of hospitals, food production was equally shared by hospital staff and a third-party vendor.

Nearly two-thirds (65%) of hospitals reported having a written food policy or strategy, and half (50%) indicated having standards specifically defining what foods and beverages were allowed to be sold (see **Table 9**). Nutrition information was available in only a small proportion of hospitals' cafeterias and about half reported having healthy checkouts.

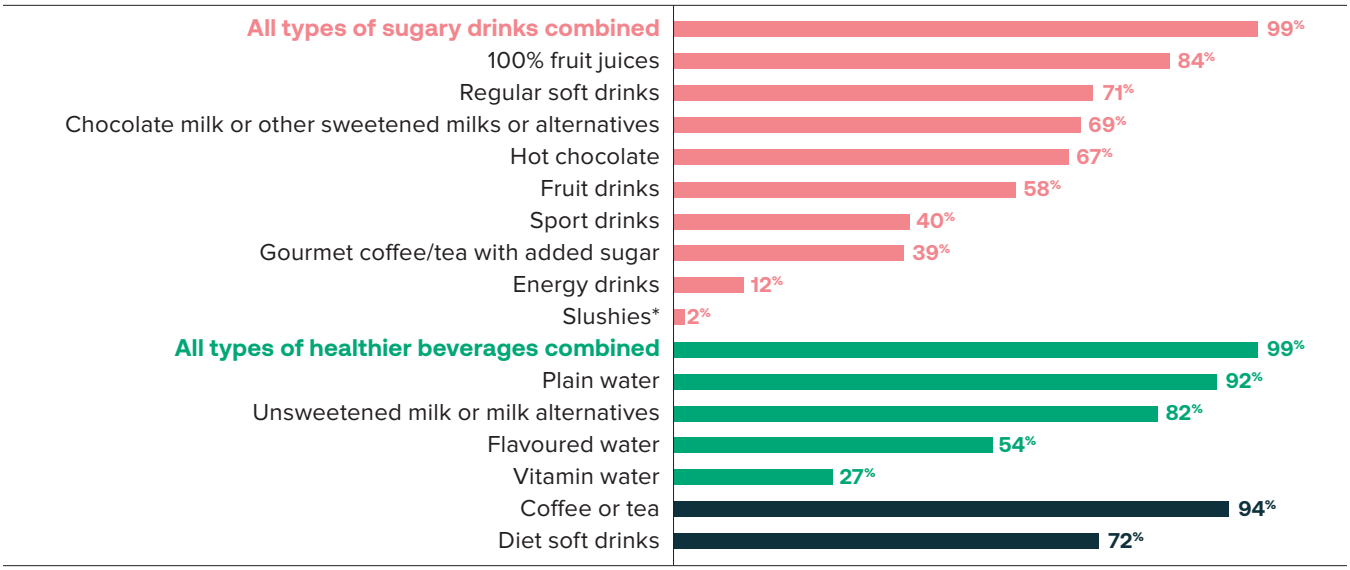
TABLE 9. **Other key indicators for hospital food environment**

Indicators	Number of Hospitals n (%)
Hospital food policies (n=152[a])	
Hospitals that reported having a written food policy or strategy	**97 (64.7)**
Policy developed by the hospital	13 (13.4)
Policy developed by regional or provincial instances	80 (82.5)
Policy developed using or based on other resources	4 (4.12)
Hospitals that reported having a policy defining what foods or drinks are allowed to be sold	74 (49.3)
Cafeteria food environment (n=141)	
No less healthy foods or beverages are prominently displayed at the check out	75 (53.2)
Nutrition information (e.g., calorie or sodium content) per serving are...	
...posted on menu boards in the cafeteria(s) for some or most items	23 (16.3)
...available in brochures or other display areas for some or most items	32 (22.7)

[a]n=2 hospitals had missing data for these outcomes.

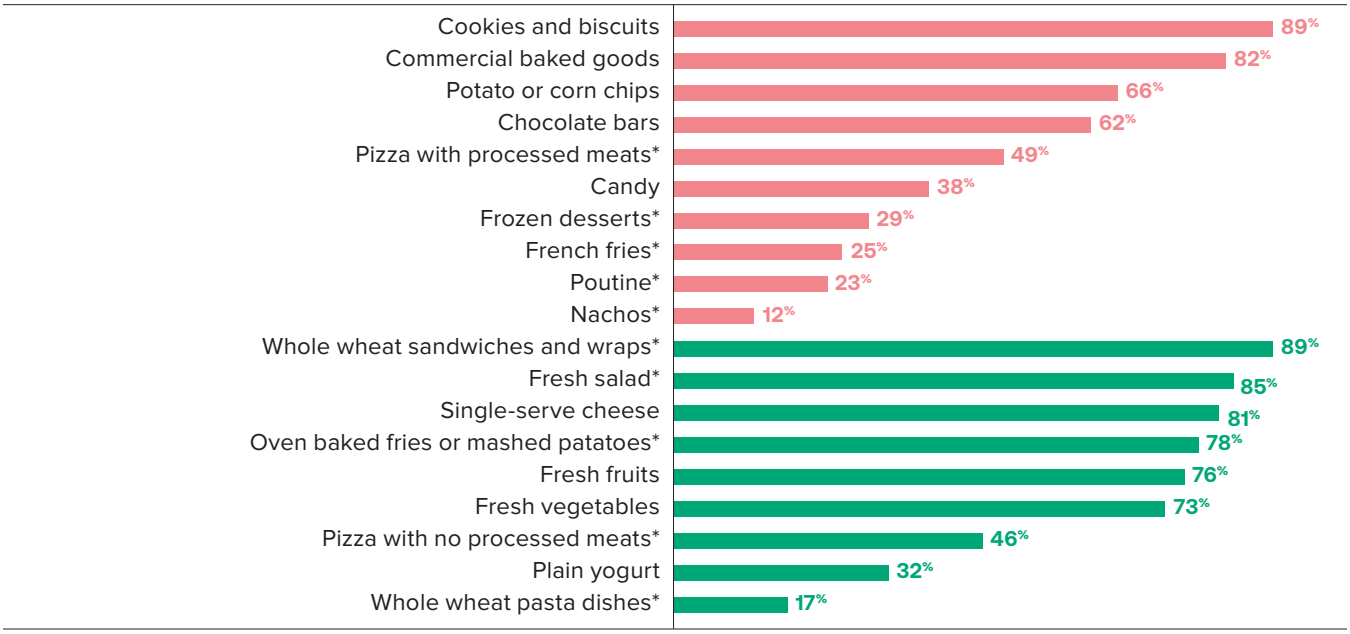
Hospitals were asked if they sold or served a list of beverage and food options (see **Figure 14** and **Figure 15**) which were classified as healthier if they broadly aligned with Canada's food guide and less healthy if they did not. Among hospitals that offered beverages for sale on a regular basis (n=145), only 1 offered exclusively healthier options. Of the drink options queried, hospitals reported on average 4.5 (SD: 2.1) sugary drink options available on a regular basis (out of 9 potential options). Among hospitals that offered food on a regular basis (n=146), only 3% offered exclusively healthier options. On average, hospitals reported having 5.8 (SD: 2.0) healthier foods options (out of 9 potential options) and 4.7 (SD: 2.3) less healthy food options regularly available (out of 10 potential options).

FIGURE 14. **Prevalence of hospitals that reported offering various beverage options on a regular basis in the cafeteria and/or in vending machines**



*Offered in cafeterias only;
[a]Beverages containing added or free sugars;
[b]Beverages containing little to no added or free sugars, sweeteners, sodium, saturated fats or caffeine.

FIGURE 15. **Prevalence of hospitals that reported offering various food options on a regular basis in the cafeteria and/or in vending machines**



*Offered in cafeterias only;
[a]Foods that are ultra-processed, fried or that have high levels of sodium, sugar and/or saturated fat;
[b]Minimally processed or whole foods, with limited amounts of added sodium, sugar and/or saturated fat.

Recreation and sports centres

A sample of 134 randomly selected recreation and sport centres were audited in 2021 from nine provinces in Canada, and an analysis was conducted of the foods and beverages offered in vending machines. In total, 111 (82.8%) facilities had vending machines, and beverage vending machines were present in 90/111 (81.1%) centres. A total of 189 beverage vending machines (n=106 from four provinces with nutrition guidelines, n=83 from five provinces with no guidelines) were included in the sample. The healthiness of beverages was evaluated using Health Canada's Nutrient Profile Model designed to identify products that should not be marketing to children[27].

On average, 36.5% (SD: 22.8) of beverages per vending machine were low in nutrients of concern. There was no difference in the average prevalence of beverages low in nutrient of concerns in vending machines between provinces with nutritional guidelines (36%; SD: 20.0) and provinces without guidelines (38%, SD: 26.1) (p=0.3). Only 8.5% of vending machines (n=16) sold ≥80% beverages low in nutrients of concern.

Only **8.5% of vending machines** (n=16) sold ≥80% beverages **low in nutrients of concern**.

Policy implications

Overall, schools and hospitals' food environments had characteristics that could both hinder and encourage healthy dietary patterns. While the majority of hospitals and schools in this sample reported having some type of food policy, this did not always align with a healthier profile of food and beverage options available, which suggests that other factors related to policy implementation (such as staff capacity and training or adequacy of facilities and equipment) are likely required for policy success[147]. Similar trends were observed in recreation and sports centres: voluntary provincial nutritional guidelines did not lead to a higher prevalence of healthier beverages in vending machines. Comprehensive policies (e.g., with effective nutrition criteria, defining the type of food and food services venues and programmes included and food suppliers, caterers and vendors that are required to comply) could support healthier food environments in these public sector institutions1[40].

Food Retail

Retail environments are the front line for consumer food purchases and include both **community** and **consumer** environments.

Community environments represent the geographic accessibility of different types of foods and beverages in communities, such as the density and proximity of food shops and restaurants. Exposure to retail food outlets within work, home or school neighbourhoods and transportation routes influences consumers' ability to access certain foods, affecting food purchasing and consumption patterns[148]. Various definitions can be used to identify healthier and less healthy food outlets, and the literature is inconsistent in identifying which outlets are associated with poorer diet and health outcomes; however, there is reasonably strong evidence that fast food restaurants typically sell foods of lower nutritional quality, and a greater density of fast-food outlets has been associated with overweight and/or obesity[149,150].

Consumer environments represent consumer cues for purchasing within stores or restaurants. Various features of stores and restaurants (e.g., cost of foods, product availability, placement and promotion, quality of fresh foods, availability of nutrition information) may influence diet-related outcomes. For example, the ways in which foods are merchandised in-store and the nutritional quality of food available in stores impacts sales, purchasing and/or consumption of foods[151]. 'Key placement areas' such as checkout aisles in supermarkets are known to have higher customer traffic and are used to promote items for sale, often for a cost to the food manufacturer who wants their products promoted[152]. Digital retail food environments, such as online food delivery platforms, are also an increasingly important consumer food environment (refer to the Digital food environments section on page **85**).

Community environment: food outlets within school neighbourhoods

In 2022, geographic locations of food outlets around schools were recorded via a data collection application using Geographic Information System coding in six cities in a random sample of school neighbourhoods stratified by urban/rural, socio-demographic characteristics, and by primary/secondary school. Food outlets included various store (e.g., supermarket, convenience store, pharmacy, dollar store, ethnic, grocer) and restaurant (e.g., fast-foods, sit-down restaurants) types. Density of food outlets (i.e., number of outlets) within a 1 km radius around schools was assessed.

Children's school food environments provided access to multiple food sources and opportunities to purchase foods ('food opportunities') before, during and after school hours. The density of food stores and restaurants around schools varied across cities. On average, the school neighbourhoods sampled had at least 20 different food opportunities within a 1 km radius, with the density of restaurants greater than the number of food stores (see **Table 10**). Overall, Winnipeg had the highest density of food stores around sampled schools, whereas the density of all restaurants and of fast restaurants specifically was the highest in Vancouver. In all provinces, the average number of fast food outlets exceeded the threshold associated with an increased likelihood of consuming excess junk food at lunchtime (2 fast-food outlets within a 750 m radius around schools).[153]

TABLE 10. **Density of food outlets within a 1 km radius of a sample of schools in six provinces**

City	Average number of food stores, n	Average number of fast-food restaurants, n	Average total number of other restaurants, n	Average total number of food outlets, n
Vancouver, BC	10	7	27	**45**
Calgary, AB	4	4	11	**20**
Winnipeg, MB	16	2	6	**25**
Ottawa, ON	4	3	12	**19**
Québec City, QC	9	2	12	**23**
Halifax, NS	3	6	17	**27**

Consumer environment: food stores and restaurants

Results are drawn from audits conducted in 2021-2022 for the Three City Study (n=405 restaurants and 175 food stores in Saskatoon SK, Kitchener ON, St. John's NL), the Six-city Study (n=1605 restaurants, 588 stores in Vancouver BC, Calgary AB, Winnipeg MB, Ottawa ON, Québec City QC and Halifax NS) and/or the Northern Study (n=130 restaurants, 50 stores in Whitehorse YK, Haines Junction YK, Carcross YK and Yellowknife NWT), sampling a total of 2140 restaurants and 813 stores. [122]. Health Canada's Nutrient Profile Model designed to identify products that should not be marketing to children[101] was used to assess the healthiness of foods and beverages in stores and of entrées in restaurants.

Food stores

Food placement

Among the 813 food stores sampled, 'key placement areas' (i.e., checkout aisles, end caps and island displays) were devoted to less healthy foods or beverages in the vast majority of outlets. Between 89% and 94% of stores had at least one unhealthy foods in the checkout aisles, 94% of stores sold at least one unhealthy foods in the end caps and between 91% and 98% of stores sold unhealthy foods in their island displays (see **Table 11**). In contrast, fewer than 25% of retailers had at least one junk-food-free checkout aisle, and less than half had at least one healthy foods or beverages in end caps or island displays. Only 2% of retailers in all three studies had vegetables at the checkout, and 6% had fruits at checkout.

TABLE 11. **Percentage of stores with healthy and unhealthy items at strategic locations**

	Checkout aisles		End caps				Island displays		
	With at least one unhealthy food	With at least one junk-food-free checkout aisle	With at least one unhealthy food	With at least one unhealthy beverage	With at least one healthy food	With at least one healthy beverage	With at least one unhealthy food	With at least one healthy food	With at least one healthy beverage
	(% of retailers)		(% of retailers)				(% of retailers)		
Three-city study (n=175)	94%	9%	—	—	—	—	98%	—	—
Six-city Study (n=588 stores)	89%	24%	94%	55%	46%	37%	—	36%	41%
Northern Study (n=50 stores)	90%	10%	—	—	—	—	91%	—	—

Food availability

From the 588 stores analysed in the Six-city Study,

— **1 in 2 stores had "junk food power-walls"**, which displayed dozens of candy varieties, salty snacks, and/or caloric beverages at check-out locations;

— the **most commonly available** types of **food** in all three key placement areas (checkout aisles, end caps, island displays) were: **Candy and gum, Salty snacks** and **Sugar-sweetened beverages, juice, or fruit drinks** (see **Table 12**);

— the **least frequently available type of foods** across these locations were: **Fresh fruits and vegetables**.

TABLE 12. **Percentage of stores (n=588) with indicator foods or beverages in key placement areas**

	Checkout aisles	End caps	Island displays
Candy & gum	82%	66%	69%
Salty snacks	55%	81%	71%
Sugar-sweetened beverages, juice, fruit drinks	30%	50%	59%
Cookies and granola bars	23%	38%	31%
Water	15%	29%	29%
Fresh fruit	7%	9%	18%
Fresh vegetables	2%	8%	11%

Nutrition information environment in retail settings

The availability of nutrition information in stores was also very low. Results from the Six-city study[122] showed only 2.2% of retailers had nutrition-related shelf labels.

The online grocery store environment also provides inconsistent nutrition information. According to a study assessing the availability and quality of food labelling components of fresh and pre-packaged products (n=555) on websites of the eight leading grocery retail websites in Canada[154], nutrition label components were not consistently available for products sampled, with poor image quality or a lack of information provided. For example, of the 506 products required to declare nutrition information on the product package, as per the Food and Drugs Regulations[69], 61% displayed all mandatory nutrition information (i.e., nutrition facts table, ingredients and allergens)[154]. The proportion of products carrying each mandatory labelling components is shown in **Figure 16**.

FIGURE 16. **Percentage of products carrying a mandatory labelling component**

Restaurants

Promotional strategies

Overall, 21% (n=455) of restaurants from the Three-city study, Six-city study and/or the Northern study[122] had children's menus. Relatively few restaurants used promotional strategies that have been identified to encourage overconsumption: 14% of restaurants in all three studies offered free refills on caloric beverages children's menus[122] and only 2% had super-sized options available in the Six-city study.

Many restaurants in the Six-city study (69%) advertised third-party delivery, such as Uber Eats or DoorDash, demonstrating this as a key element of restaurant promotions to increase accessibility and purchasing of products.

Food availability on children's menus

Among restaurants in the Six-city Study that had children's menus (18%), nearly all entrées featured on the children's menus (98%) were considered unhealthy[122]. Of note, many restaurants provided choices of sides with entrées. To be as conservative as possible, children's menu entrées were considered healthy if it was possible to order an entrée that met nutritional criteria along with at least one side that met nutritional criteria.

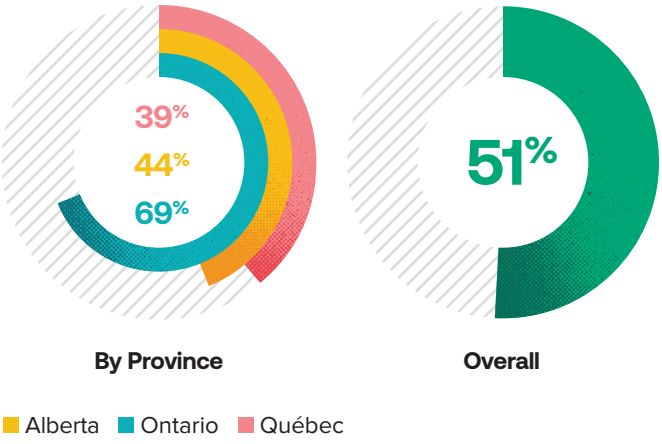
Nutrition information environment

Among restaurants that had children's menus in the Three-city study, Six-city study and/or the Northern study[122] (21%), 35% had nutrition information for all items.

A separate study conducted in 2021 examined the availability of nutrition information on online food delivery platforms (Uber Eats, SkiptheDishes and DoorDash) for the 13 largest restaurant brands in Canada[155]. The availability of calorie labelling on those platforms was examined in Ontario (where there is mandatory calorie labelling on menus) and Alberta and Québec (with no mandatory menu labelling). A total of 49,292 food items (Alberta n=16,133; Ontario n=16,821, Québec n=16,338) were assessed.

Calorie information on online food delivery platforms was not consistently displayed across provinces and menu items, meaning that consumers from different provinces had differing access to nutrition information that could help guide their food purchases (see **Figure 17**). Of the 49,292 food items included, half (51%) displayed calorie information, but the proportion varied by province[155]. Restaurants on online food delivery platforms in Ontario were more likely to have calorie information than restaurants in Alberta (OR = 2.75, 95% CI 2.63–2.88) and Québec (OR = 3.42, 95% CI 3.27–3.58).

FIGURE 17. **Percentage of menu items from major chain restaurants with calorie labelling by province and overall**



A study of menu items in Canadian chain restaurants in 2020 found an increase of nutrition information availability compared to similar study conducted in 2016, suggesting a potential downstream impact of the menu labelling regulation implemented in Ontario in 2017 on improving the availability of nutrition information in restaurants[54].

Policy implications

Characteristics of community and consumer food environments in Canada are likely to undermine healthier diets. Key placements areas in stores were often devoted to foods with a poor nutritional profile such as candies and salty snacks, while fresh and healthy foods such as fruits and vegetables were seldom available. Meals targeted to children in restaurants were not optimal for children's health and promoting healthy options. In addition, availability of nutrition information in stores and restaurants and online was often limited and inconsistent across provinces and products.

While retail environments can be difficult to regulate, there are emerging examples of policies globally that can improve retail food environments. Local zoning laws that prohibit increasing density of fast food outlets around schools are an example[156,157]. Other policy interventions include mandatory nutrition information in chain restaurants, such as has been introduced in Ontario since 2017[158], which may be a promising strategies to improve nutritional quality of foods in retail environment and support healthier, informed consumer purchases.

Policy examples from the United Kingdom that have restricted in-store promotion of some food items in key placement areas[159] or from France that have banned free refills of soda and sugary drinks in restaurants[160], demonstrate the possibility to regulate retail environments. Interventions that reduce merchandizing of unhealthy foods in stores have demonstrated promising effects in decreasing the purchasing of such foods could also be considered by policy makers, in partnership with retailers, to improve retail environments[161].

Food Prices

The cost and affordability of food is of growing concern to addressing population health, health equity, and the global burden of disease[162].

Between 2015 and 2019, food prices in Canada increased by 9.2%, and again by 14.8% between January 2021 and December 2022[163]. Food inflation has increased disproportionately to other consumer costs of living, which increases financial pressure on families living in Canada, particularly for those with lower disposable incomes[164,165]. Escalating costs may amplify the potential for nutritional compromises among those households vulnerable to food insecurity[166,167], which is also on the rise.

Data suggest that 18% of households reported experiencing food insecurity in 2022, compared to 16% in 2021, with consistently higher prevalences among racialized households who identify as Black, those receiving social assistance, renting, and who reside in Atlantic Canada and the North[168]. More recent data have shown that in 2023, the prevalence of food-insecure households in the 10 provinces reached 22.9%, ranging from 15.7% in Québec to 28.9% in Nova Scotia[169]. A survey conducted in 2022 by Statistics Canada revealed that among food, transportation, housing, household operations, recreation and education, food was the area where rising prices were most affecting those living in Canada[170].

From a food environment lens, food prices can be examined through the costs of food items within the food supply, such as modelling the differential costs between relatively more and less nutritious products and diets[171], or the affordability of a diet that meets basic nutritional standards[164,172,173].

Food and diet costs

Association between food prices and total and free sugar content

One study examining the price of foods and the total and free sugar content of products in food categories (n=7357 products included in the analysis for total sugar and n=2263 products for free sugar) that are major contributors to population intakes of free sugars in Canada identified a negative association between price and total sugars for Sugars, syrups, preserves, confectionery and dessert (β=-0.003; p=0.0006), and Juice (β=-0.004; p=0.0275), and a positive association for Baked products (β=0.003; p=0.0005) and Frozen desserts (β=0.006; p=0.0001)[174]. Similar negative associations between the price and free sugar content were found for Sugars, syrups, preserves, confectionery and dessert (β=-0.009; p<0.0001), Juice (β=-0.010; p=0.0.0391) and Regular soft drinks (β=-0.015; p<0.0011) and a positive association for Baked products (β=0.004; p=0.0015). These results demonstrate that for multiple food categories that are known to contribute to free sugars intake, more expensive products tend to have lower total and free sugar amounts[174].

Relationship between healthiness and changes in food prices over time

Another study used a sample of matched foods and beverages in the FLIP 2017 and 2020 databases to assess changes in sodium, sugar and saturated fat composition of products (n=3753)[175]. A nutritional quality score for products was calculated using the Food Standards Australia New Zealand (FSANZ) nutrient profiling system, for which lower scores indicate healthier products[176].

Overall, the study found an increase in prices in 10 food categories (Bakery, Eggs, Fish, Fruit, Legumes, Meat, Salad, Snacks, Soups and Vegetables) and a decrease in four categories (Beverages, Miscellaneous, Sugars and Foods for children) between 2017 and 2020[175]. The changes in price differed across the three retailers evaluated in the study. Across almost all food categories, changes in the healthiness of products did not predict food price change. In other words, improvements in the healthiness of food items were not associated with greater price increases. However, for the Legumes and Combination dishes categories, an increase in healthiness was significantly associated with a price decrease and increase, respectively.

Relationship between food prices and nutrient reformulation

A similar analysis of matched foods in the FLIP database in 2017 and 2020 examined differences in price changes among products that had been reformulated and had higher or lower levels of calories or nutrient levels[175]. The study found that there were no differences in price changes between products that had been reformulated and those that had not been reformulated.

Association between diet cost and dietary patterns aligning to the recommendations in the 2019 Canada's Food Guide

A multicenter cross-sectional study in Québec assessed the association between daily diet costs and Healthy Eating Food Index (HEFI)-2019, which measures adherence to Canada's food guide 2019 (CFG-2019) recommendations on healthy food choices and attributes an overall score[177]. Higher HEFI-2019 scores indicate dietary patterns that are more closely aligned with the food guide recommendations. The findings showed a positive association between the HEFI-2019 score and the daily diet cost. For a given amount of calories, dietary patterns better aligning with the recommendations on healthy food choices (HEFI-2019 score 75th vs. 25th percentiles) were associated with a 1.09 $CAD higher daily diet cost (95% CI, 0.73 to 1.45). This association was observed among all sociodemographic subgroups defined according to sex, age, education, household income and administrative region.

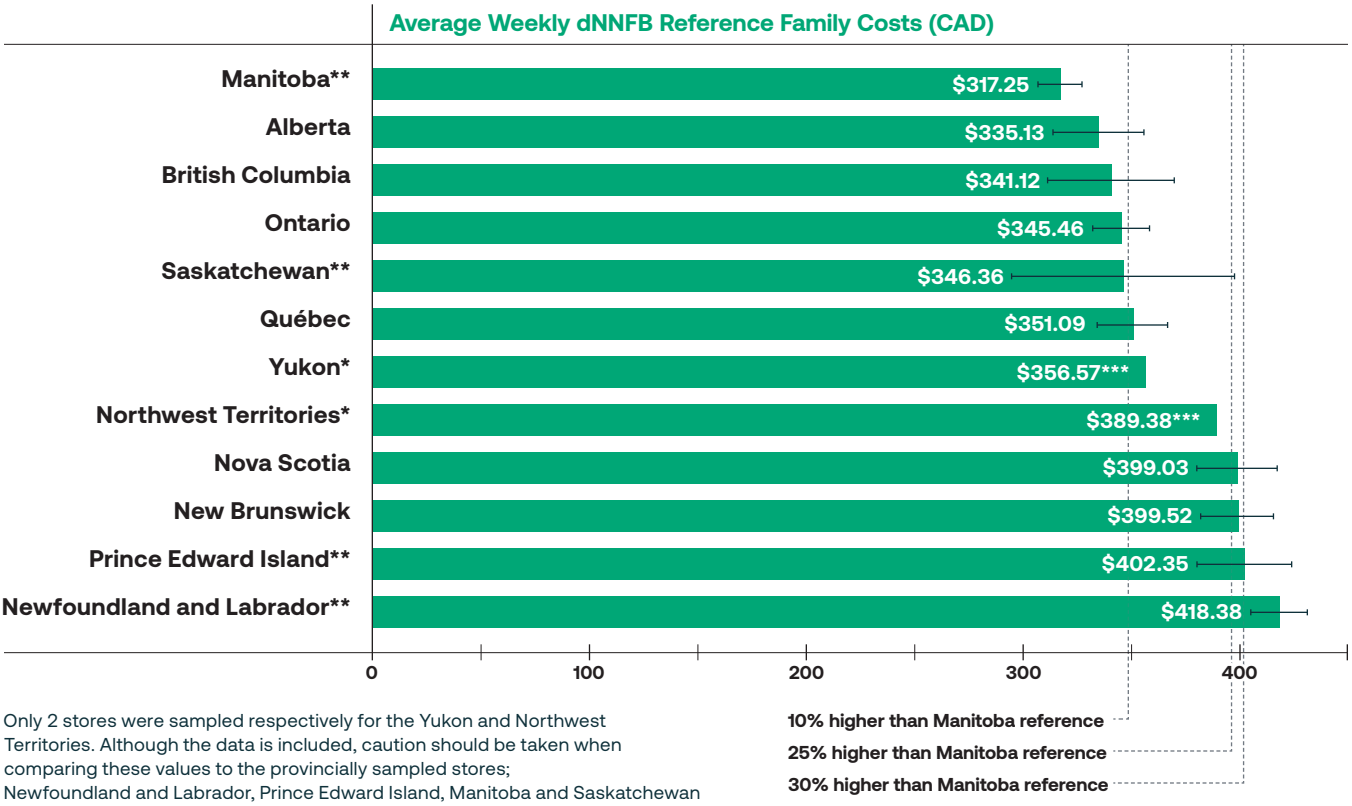
Food affordability

Digital, publicly available food price data were collected over a two-day period in November 2021 at 751 Loblaw's stores (from 11 regular and discount banners) located across all provinces and territories (except Nunavut) using the digital National Nutritious Food Basket (dNNFB), a nationally representative and highly disaggregated food costing measure[172]. A total of 184 discrete products were matched to the 61 indicator foods in the 2019 National Nutritious Food Basket† (NNFB) to estimate the cost of the dNNFB. The average weekly dNNFB costs for Health Canada's reference family (two adults, two children) were calculated[172,178].

The average weekly cost of a nutritious food basket differed greatly across provinces and territories: it was more expensive for families living in the Atlantic provinces ($399.03 to $418.38 CAD) than for families living in other provinces or territories ($317.29 to $389.38 CAD) (see **Figure 18**)[178]. For example, families in Newfoundland and Labrador would pay an extra 100$ per week (about 400$ per month) for the reference family basket than families living in Manitoba. An important finding from this study[172] was that annual cost estimates produced from digital data were higher than the existing food component of the Market Basket Measure[164], which suggests that existing national statistics of costs of food across the country may be underestimated.

†The National Nutritious Food Basket is a standardized tool used in Canada to monitor the cost and affordability of a basic, healthy diet based on the national dietary guidelines. It includes a list of 60 nutritious foods and reflects the minimal cost of health eating of individuals and families.

FIGURE 18. **Average Weekly dNNFB Reference Family Costs Stratified by Statistics Canada Region**



* Only 2 stores were sampled respectively for the Yukon and Northwest Territories. Although the data is included, caution should be taken when comparing these values to the provincially sampled stores;
** Newfoundland and Labrador, Prince Edward Island, Manitoba and Saskatchewan had store counts >6 but <30, confidence intervals should be interpreted cautious;
*** Confidence intervals not applicable.

Policy implications

These results show some indication that healthier food items may be more expensive in some food categories, and that diets that align with dietary guidelines can be relatively more expensive, although the cost of healthy foods differs across the country. Moreover, the findings do not provide evidence of reformulation impacting food prices in a wide variety of products, suggesting that it is possible for food and beverage manufacturers and retailers to improve the nutritional quality of products without increasing product prices, contrary to common arguments that reformulation is costly and will result in higher consumer prices. The findings also demonstrate that food prices vary disproportionately for certain products, store banners, and geographic regions across Canada, and that the affordability of a diet aligning with national dietary recommendations remains a challenge.

Policy efforts by federal and provincial governments could contribute to making healthier foods more affordable. Evidence shows that social policy interventions that address issues of income security and social protection (including cash transfers, labour force participation interventions, and improvements to the design of social assistance) are most effective at addressing issues of food insecurity and would make healthy diets more affordable[179–182]. Other food environment policies may address the cost of healthier food products. Food policies related to food labelling, food taxes, marketing restrictions and bans of certain ingredients can incentivize (and/or require, by law) the food industry to reformulate their products. Retailers play an important role in establishing food prices, thus underscoring the need for transparency and competition in the grocery supply chain, as highlighted in previous studies[183] and described in recent federal inquiries and reports[184,185]. Other major global events such as pandemics, geopolitical conflicts or climate disruptions also lead to supply chain disruption and other consequences impacting food prices, and stability in food systems is a key element of stabilizing and reducing the price of healthier foods.

Food Trade and Investment

The promotion of international trade and foreign direct investment, through multilateral, regional, and bilateral agreements, has had profound implications for the structure of food systems (such as the internationalization of supply chains and the market share of transnational food corporations), and in turn, for the availability, nutritional quality, accessibility, price and promotion of foods in different locations.

Canada is a member of the World Trade Organization (WTO) and thus Party to all WTO Agreements, and Party to 16 regional and bilateral trade agreements. Canada has also signed 38 international investment agreements. These agreements heavily influence the import and export of foods in Canada, as well as the domestic market.

A descriptive analysis of quantitative trade and investment data over the period 1994 to 2020 and a qualitative review of policy documents related to nutrition regulations and trade concerns was conducted in 2022–2023[186]. This analysis below reports on four key indicators of the state of trade and investment policy and practice as related to food systems:

1. Tariff rates and free trade partners (1994–2020)
2. Import volumes (1990–2021)
3. Foreign direct investment into food environment-related sectors (2000–2020)
4. Policy space for food environment regulations (1995–present)

First, a set of focus food categories reflective of the range of foods in the average Canadian diet was selected. Next a set of 76 Harmonised System (HS) food product codes that aligned with the focus food categories were identified from the World Customs Organization. All food products were grouped by NOVA category for level of processing (see **Table 2**). Tariff rates were obtained from the Canada Customs Tariff Schedule[187]. Data on import volumes were collected for select food and beverage product categories from the UN Comtrade database[188]. Next, foreign direct investment data was collected from Statistics Canada using the North American Industry Classification System[189] (e.g., food manufacturing, beverage and tobacco product manufacturing). Finally, data relating to policy space and food environment governance was collected using the World Trade Organization's (WTO's) databases of trade disputes and specific trade concerns[190].

Tariff rates and free trade partners

Tariff rates reflect the amount of 'border tax' applied to imported goods. Bound tariff rates represent the maximum tariff rate that can be applied to a commodity, and are defined in the General Agreement on Tariffs and Trade (GATT) and subsequent tariff negotiations. Tariff rates are important because they can play a role in establishing the price of foods in a food system and the level of competition between domestically and internationally produced foods. For a healthier food environment, we generally hope to see lower tariff rates on healthier/less processed foods, and higher tariff rates on unhealthy/ultra-processed foods.

In Canada between 1994 and 2020, the most extensive tariff rate reductions on foods included in this study, across all levels of processing, occurred in 1995. This coincides with the establishment of the World Trade Organization and the updated General Agreement on Tariffs and Trade. Tariff rate reductions on the selected foods in this analysis across all levels of processing have generally been minimal or non-existent, since 1995. While Canada has made minimal changes to these set maximum tariff rates, the number of countries included in preferential arrangements to trade freely on our selected food products, across all levels of processing, generally increased during this period. Excluding eggs and dairy-related products, the foods included in this study across all levels of processing have minimal tariff rates (see **Table 13**).

Ultra-processed food products tended to have higher tariff rates relative to food products with lower levels of processing. This is good news, as higher tariff rates are likely to result in higher prices and/or lower availability and consumption of these products from imported sources. Tariff rates on the food categories examined, across all levels of processing, remained highest on eggs and dairy-related products, consistent with their status as supply managed agricultural sectors in Canada. High tariff rates for these food categories, which may include products that are supportive of good health, may be counterproductive to public health.

TABLE 13. **Average Canadian tariff rates for key food categories by NOVA classification (1994–2020)**

NOVA	Tracer Food	Average Tariff Rate (Most-Favoured Nation)					
		1994	1995	2005	2010	2015	2020
1	Dairy	284%	241%	241%	241%	241%	241%
	Eggs	192%	163%	163%	163%	163%	163%
	Fish (fresh/frozen)	-	-	-	-	-	-
	Fruit (fresh/frozen)	3.6%	3.3%	3.3%	3.3%	3.3%	1.4%
	Grains/Cereals	49.2%	31.4%	20.9%	20.9%	20.9%	20.9%
	Meat (fresh/frozen)	22.1%	15.3%	12.2%	12.2%	12.2%	12.2%
	Nuts (fresh or dried)	-	-	-	-	-	-
	Vegetables (fresh/frozen)	9.4%	6.9%	6.9%	6.9%	6.9%	3.8%
2	Oils	10.5%	6.7%	4.3%	4.3%	4.3%	4.3%
	Sugars	-	-	-	-	-	-
3	Cheese	289%	245%	245%	245%	245%	245%
	Fish/seafood (prepared/preserved)	-	-	2.3%	2.3%	2.3%	2.3%
	Meat (prepared/preserved)	-	-	-	-	-	-
3/4[a]	Breads/biscuits/pastry/breakfast cereals	5.0%	2.2%	2.0%	2.0%	2.0%	2.0%
	Dairy (sugar or sweetened milk/yoghurt)	258%	219%	219%	219%	219%	219%
	Fruit juices	-	-	-	-	-	-
	Meats (processed)	20.0%	12.8%	12.5%	12.5%	12.5%	12.5%
	Ready-to-eat dishes	11.3%	7.2%	3.0%	3.0%	3.0%	3.0%
4	Dairy - processed cheese, ice cream	152%	127%	127%	127%	127%	127%
	Ready-to-eat foods	17.5%	11.2%	11.0%	11.0%	11.0%	11.0%
	Sauces - soya, tomato, other condiments	15.8%	11.2%	11.0%	11.0%	11.0%	11.0%
	Snacks - sweet biscuits, sugar confectionery, potato chips	5.0%	2.9%	2.7%	2.7%	2.7%	2.7%
	Soft drinks	17.5%	11.2%	11.0%	11.0%	11.0%	11.0%
	Sweeteners	-	-	3.2%	3.2%	3.2%	3.2%

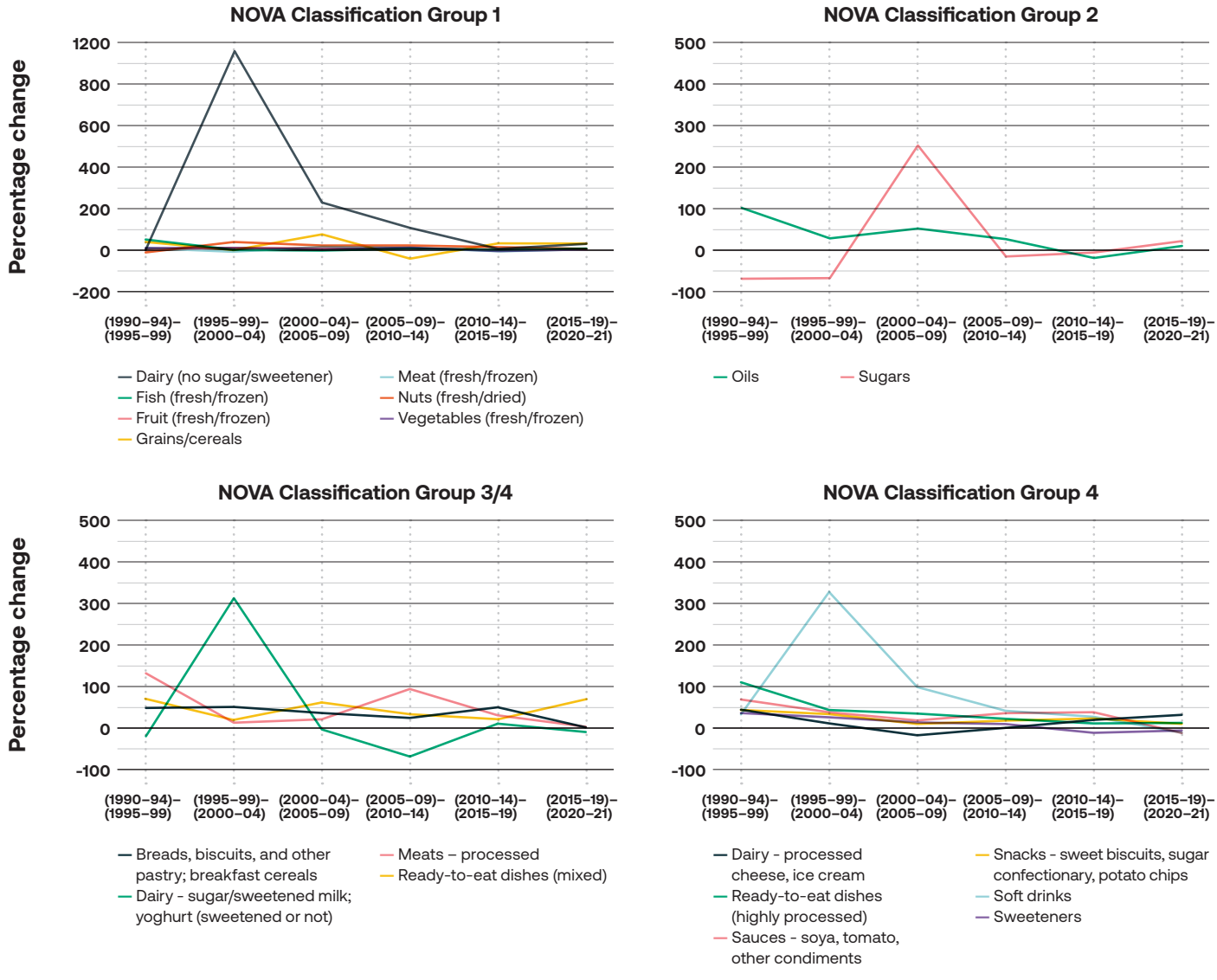
a If the majority of foods were of different levels of processing, the food product was categorized as a mix of these respective levels (i.e. mixed – NOVA Groups 3 and 4).

Import volumes

Import volumes represent commodities that enter the Canadian food system, thereby becoming part of the food environment. Analyzing the volume of food imports by level of processing provides an indicator of the relative healthiness of the foods that are entering the Canadian food system and are available in Canadian food environments. In the period following Canada joining the WTO (in 1995), there were large surges in the import of dairy products across varying levels of processing (with or without sugars or sweeteners), processed meats, and soft drinks into Canada, which coincided with tariff rate reductions (see **Figure 19**). Between 2000-2004 and 2005-2009, the import of sugars into Canada experienced a significant period of growth.

As shown in **Figure 19**, there were not consistently higher levels of imports as the level of processing increased; however, the subset of foods that experienced significant periods of growth in import volumes (e.g. dairy products, sugars, prepared and preserved meats, and soft drinks) over time, without subsequent declines, tended to be associated with poorer nutrition and higher levels of processing. As a result, these foods, which largely fall into less healthy food categories, have likely become more prominent in the Canadian food system.

FIGURE 19. **Percent change in import volume for key food categories by NOVA classification (1990–2021)**



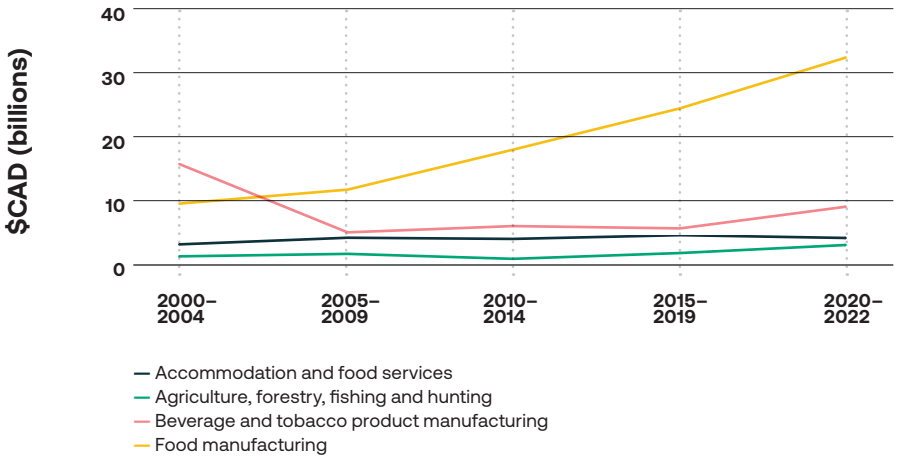
Notes: Positive values indicate that there is growth in the category, and upwards trends or 'spikes' in the graph suggest periods of greater growth in imports.

Foreign direct investment

Foreign direct investment into food environment-related sectors represents the influence of foreign companies on the food environment through market development within Canada's borders.

Foreign direct investment into Canada in food manufacturing has been consistently increasing since 2005, and in the period 2020-2022 was valued at $32.6 billion CAD (see **Figure 20**). Foreign direct investment in this sub-sector has significantly outpaced all other food environment-related foreign direct investment categories. As shown in **Figure 20**, there has been major increases in foreign direct investment in Canada over the past several years, and some indication of increasing investment in agriculture, forestry, fishing and hunting as well. This study and others suggest that foreign direct investment plays a significant and increasing role in the Canadian food system, in particular in the food manufacturing sector.

FIGURE 20. **Foreign direct investment in Canada by North American Industry Classification System classification (2000–2022)**



Policy space and governance

Trade and investment forums can be used to formally challenge (through dispute settlement) or informally raise concerns (through specific trade concerns in WTO sub-committees) regarding national policy design and development. This includes food environment policies to promote healthy food environments and diets (e.g., fiscal and pricing policies on food products, nutrition labelling policies, food marketing policies, food composition policies, and product bans).

Between 1995 and present, Canada neither raised, nor was the respondent to, any formal trade or investment disputes of healthy food environment-related policies; nor was it a respondent to any specific trade concerns (i.e., informal challenges) regarding healthy food environment-related policies through the WTO Technical Barriers to Trade (TBT) Committee. However, Canada raised a series of specific trade concerns regarding trade partners' healthy food environment policies through the WTO TBT Committee.

Policy implications

These results have both positive and negative implications for food environments. Lowering tariff rates generally leads to more imports and increased consumption. In the case of ultra-processed foods, this can have negative consequences for public health nutrition. Resisting reductions in tariff rates for ultra-processed food categories, as well as opposing the addition of new countries trading freely on these products, could result in benefits to public health in Canada. The results related to import volumes further reinforce the importance of maintaining existing tariff rates on ultra-processed food products to prevent future periods of import growth. Likewise, Canadian trade negotiators should be urged to support trade partners in maintaining their existing tariff rates on ultra-processed food products so as not to negatively affect population nutrition outcomes abroad, particularly in lower-income countries that may have reduced bargaining power with more economically influential states.

When raising specific trade concerns against healthy food environment-related policies in WTO Committees, Canadian trade representatives should carefully consider the possibility of fostering regulatory chill – delaying, compromising, or abandoning the formulation or implementation in trade partner countries of bona fide (i.e. made in good faith) regulatory measures in the interest of the public good as a result of a real or perceived threat of arbitration. Lastly, with regards to reporting, more disaggregated data from the Canadian government on the target of foreign direct investment would enable more refined analyses and help better inform policies to direct these investments towards healthier food manufacturing.

Digital Food Environments

Digital food environments have been broadly defined as "the online settings through which flows of services and information that influence people's food and nutrition choices and behaviour are directed [...] encompass[ing] a range of elements, including social media, digital health promotion interventions, digital food marketing and online food retail"[191].

Digital food environments have the potential to exert both positive and negative influences on health and nutrition outcomes. On one hand, they can improve access to nutritious food in underserved areas, such as through online grocery services that make healthy food options more readily available. On the other hand, they may also contribute to unhealthy dietary practices, such as by increasing the accessibility of ultra processed foods through online delivery services[191]. The WHO has recognized that digital environments are a key avenue to work on to change dietary patterns and achieve healthy and sustainable population diets, and that digital technological innovations could be leveraged to improve public health[142].

Digitalization of food environments is occurring at a fast pace and was accelerated by the COVID-19 pandemic, most strikingly in the food retail sector[192]. Online grocery shopping and online food ordering have become increasingly popular[193,194], impacting food availability. From 2018 to 2023, the retail value of online grocery shopping increased from approximately $3.8 billion CAD to $15.1 billion[195], and third-party online food delivery similarly increased from $725 million CAD to $4.4 billion[196]. Recent research has shown that 19% of adults in Canada reported they had purchased a meal on online food delivery in the past 7 days in 2021[197,] and this trend continues to increase[193,194,198], impacting food availability.

In Canada, digital food environments have been underrepresented in research on food environment monitoring and has been identified as an area of priority[199]. The current report highlights several critical attributes of digital food environments that have been examined in research to date that present opportunities to foster healthier digital food landscapes in Canada.

Digital food marketing in Canada

Digital food marketing remains one of the most important elements of digital food environments, given its powerful influence and pervasive presence in online settings.

Personalized marketing algorithms in digital environments target promotions for unhealthy food products, based on demographic characteristics, previous purchasing patterns, online searches, and location in a much more precise way than static marketing, and are likely to have a much stronger effect than traditional marketing approaches[91,200]. Social media also has extensive reach, providing the opportunity for viral marketing to reach millions of users, often at very little or no cost to companies. Food brands in Canada frequently marketed to children have an active presence on social media platforms through user-generated content[201].

As described in this report, recent evidence has demonstrated that:

- Actual exposure to digital food marketing through their mobile devices was estimated to be as high as 4067 ads/year for children and 8301 ads/year for adolescents, with almost 90% of advertisements seen by those groups for less healthy brands and products, such as Fast food restaurants, Savoury snacks and Candy and chocolate[116].
- Social media influencers popular among children and youth frequently promote unhealthy food products and brands. Overall, 81.8% of products and 86.9% of brands promoted by influencers on these platforms were classified as less healthy[117]. While there is significant heterogeneity in food advertising on different platforms and by different influencers, this is potentially a significant exposure for young people[117].

Digital food labelling in Canada

Digital environments are also often excluded from food labelling regulations that apply to physical purchasing locations, making nutrition information less available or comprehensive in digital environments[192]. This leaves a fundamental gap in consumers' ability to make healthy food purchases which are already challenging.

Recent evidence described in this report demonstrate that:

- On online grocery stores, only 61% of products displayed all nutrition information that is mandatory on packaged products[154] (such as the Nutrition Facts table and ingredients lists).
- Nutrition information was not easily accessible (i.e., need to scroll down or click a link) nor presented in a consistent format[154], making it challenging for consumers to use the information to make purchasing decisions.
- On online food delivery platforms Uber Eats, JustEat and SkiptheDishes, only half of menu items displayed calorie information for foods available and when available, information was not consistently presented so consumers know where to look for it, thus not supporting consumers to make healthier and informed choice[155].

E-grocery consumers have limited information on products as they cannot physically assess product quality, which may inadvertently discourage the purchase of certain foods, particularly fresh produce[202].

Digital food retail in Canada

Previous research has found that online food delivery platforms have been shown to expand access to retail food environments in Ontario[203]. Delivery locations ranged from 0.3 km to 9.4 km (mean 3.7 km) from retailers' geographic location, thus increasing accessibility to restaurant foods. Foods available on the online platforms were also found to typically be of low nutritional quality[203].

Policy implications of digital food environments

Physical and digital food environments are interconnected, each shaping and influencing the other[192,204]. To ensure that digital food environments support healthier dietary patterns, policy responses to regulate marketing, labelling and other key food environment policy domains should likely consider how such regulations apply in online environments. For example, restrictions of food marketing to children and nutritional labelling requirements should apply to both physical settings (outdoor settings, restaurants and food stores) and online settings (social media advertising, food delivery platforms, restaurants and grocery stores websites). A major challenge for public policymakers is the dynamic nature and rapid pace at which changes in the digital sphere occur, as opposed to the time required to develop and implement a policy, which can take several months or even years.

Some innovative initiatives leveraging artificial intelligence system are emerging[205-207] and could be leveraged to improve monitoring and support effective regulation. The massive amount of data harvested and generated by digital platforms (such as from food delivery apps) can also be valuable to researchers and policy makers to understand how digital food environments unfold and impact behaviors, and to develop and adapt policies in specific sectors.

There are other key elements of policy that can support creating healthier food environments, including important data protection regulations to ensure that children's data are not collected by companies using digital technologies. Evidence from Canada suggests that children's data are often collected by food companies, contrary to public health and child protection[208].

Given the high prevalence of consumers using nutrition information to make purchasing decisions in physical stores, there is an urgent need to provide guidance and regulations on the food information presentation on online grocery retail platforms.

While not explicitly explored in this report, the digital information landscape exposes the population to abundant health and nutrition information (and misinformation) through social media, blogs, websites and other media platforms. Social media platforms that foster engagement and interaction with information (e.g., by creating, liking or sharing content) are also part of this reshaping of food environments by digital technologies[192].

There is also an expressed need for more evidence on influences that digital food environments may exert on health and nutrition in different population groups (e.g., disadvantaged socio-economic groups or groups from different ethical background) and different contexts (e.g., rural vs urban locations) [204]. Buying food online may be more expensive than buying food in physical food outlets, for example, due to delivery or service fees. However, digital technologies may also be suited to address issues around equity and inequity, and to support vulnerable groups, such as programs aiming to address food insecurity. For example, in the province of Québec, where tax credits can be provided to seniors for fees related to grocery cart assembly, delivery and tipping[209], and in the US, where the Supplemental Nutrition Assistance Program (SNAP) Online Purchasing Pilot allows participants to shop and pay for groceries online using their SNAP benefits in order to increase access to healthy foods in food deserts[210]. How the digitalization of food environment can be harnessed to the benefit of all, and not widening the gap between vulnerable groups and already privileged individuals is an area for further research.

Applying a Health Equity Lens to Food Environment Research

Why does equity in food environments matter?

Socioeconomic position (SEP) refers to individuals' social and economic position in relation to others. It is most commonly measured using indicators such as household income and educational attainment. SEP has a profound impact on health because it shapes individuals' **access to resources** and their **exposure** and **susceptibility** to environmental factors that can support or undermine health[211]. This applies equally to food environments. For instance, individuals who live in socioeconomically disadvantaged neighbourhoods may be more exposed to unhealthy food environments than those who live in more advantaged neighbourhoods, with more exposure to marketing of unhealthy foods, greater numbers of unhealthy food outlets, or fewer healthier foods sold in restaurants and grocery stores. However, in other cases environmental exposures may be similar between individuals with a lower and a higher SEP, but individuals with a lower SEP may be more susceptible to the negative impacts of unhealthy food environments because, for instance, they are less able to afford to purchase minimally processed and healthier foods that tend to be more expensive[177].

A better understanding of between-group differences in exposure to unhealthy food environments and differential susceptibility to their impacts can help to create food environment policies that promote dietary and health equity.

How to measure equity-related factors in food environment research?

There are many indicators of SEP. At the individual level, common indicators include annual household income, educational attainment, food insecurity status, wealth, race/ethnicity, Indigenous status, and gender, among others. At the area level, the most commonly used indicator is neighbourhood deprivation or disadvantage. Area level measures are typically aggregates of multiple indicators of the SEP of residents who live in an area. For instance, the Canadian Marginalization Index is a 21-item index that includes four dimensions of deprivation—residential instability, material deprivation, economic dependency and ethnocultural composition—each of which is derived from the characteristics of the residents who live in each neighbourhood[212]. Importantly, all indicators of SEP capture different dimensions of SEP and thus they are best considered in tandem, as there is no single 'best indicator'. It is often desirable to use multiple indicators concurrently.

The current report examines differential exposure to healthy and less healthy food environments based on individual and area level indicators of SEP. Limited data only allow for the examination of of differential exposure for four aspects of food environments, including the composition of the food supply, food marketing, food retail and food prices. Differences in diet quality and health outcomes by SEP are also examined below. No Canadian data were located pertaining to differential susceptibility to the impacts of food environments by SEP.

Food composition

Improving the quality of the food supply has the potential to reduce dietary inequities. One modelling study found that, in addition to lowering sodium intake at a population level, meeting sodium reduction targets across the entire food supply could eliminate differences in sodium intake between food secure and insecure households, between individuals in the highest and lowest income quintiles and between groups with lower and higher levels of education[213]. A recent study found that foods that had been reformulated were not more expensive after they had been reformulated[175]. Food reformulation is an extremely promising strategy to enhance dietary equity because, provided that all foods are reformulated and prices remain unchanged, this strategy does not require individuals to make any conscious behavioural changes.

Food marketing

Food marketing can also be examined from an equity lens, as exposure to food marketing has been shown to differ according to different dimensions of SEP. A recent Canadian study that examined self-reported exposure to unhealthy food marketing among 3780 youth in Canada aged 10 to 17 found that reported exposure tended to be higher among youth from ethnic minority groups (South Asian, Black, Indigenous and mixed/other) and youth with lower income adequacy compared to White youth and youth with higher income adequacy, respectively[214]. Black youth reported seeing more ads for unhealthy foods and beverages at school than White youth, Indigenous youth reported seeing more unhealthy food ads in retail settings than White youth, and those with lower income adequacy generally reported more exposure than higher income youth[214]. Similar differences in ethnically-targeted marketing have been seen in the US[215].

Exposure to unhealthy food marketing is not consistently higher in more socioeconomically disadvantaged neighbourhoods. For example, data indicate that the prevalence of in-store marketing techniques varied based on neighbourhood socioeconomic characteristics. Retailers with 'junk food power-walls' were more prominent in less racialized neighborhoods (59%) compared to more racialized neighbourhoods (45%); however, there were fewer retailers with junk food power-walls in neighbourhoods that were more socioeconomically advantaged (40%) compared to those that were less advantaged (60%)[124]. Additionally, island displays that employed marketing strategies to attract the attention of youth were more commonly found in stores located in socioeconomically advantaged neighborhoods[124]. Thus, the limited available research demonstrates that there are inequitable exposures to food marketing, however these exposures do not consistently disadvantage those with a lower SEP. Policies that restrict marketing of all unhealthy foods in all places and at all times may therefore be needed.

Food retail

Research indicates a socioeconomic patterning in the quality of food environments in Canada, whereby more socioeconomically disadvantaged neighbourhoods sometimes have lower access to healthy foods or greater access to unhealthy foods, although there are mixed findings in this respect[199,216-223]. One study conducted around schools in Southwestern Ontario found that more urban environments and environments that were more socioeconomically disadvantaged had a greater number and density of outlets that sold 'junk food' (e.g., fast food and full-service restaurants, grocery stores, convenience stores)[220]. Studies in Saskatoon have found that more socioeconomically advantaged neighbourhoods generally had healthier in-store and in-restaurant consumer environments than more disadvantaged neighbourhoods[218,222]. Limiting exposure to unhealthy retail settings in neighbourhoods that are more disadvantaged and replacing these with greater opportunities to purchase healthier options can help to reduce inequities in exposures to unhealthy food environments.

Food prices

Data demonstrate that the cost to purchase a nutritious food basket for a reference family of four differs in different regions of Canada. For those living in the Atlantic provinces and in the Northwest territories, the cost to purchase a basket of healthier foods is higher compared to in other provinces and territories[172,178]. The largest gap between the average cost to purchase a nutritious food basket for a reference family was approximately $100 (between Manitoba and Newfoundland and Labrador). This evidence demonstrates that healthier diets are less accessible in some regions of Canada, which may exacerbate some regional inequities. The cost of foods is fundamental to supporting access to foods that can promote healthier dietary patterns and has particularly important implications for the dietary patterns of subgroups who have lower incomes and more precarious financial situations. Policies that both reduce the cost of food and enhance economic security among key populations can help to ensure that healthy food is economically accessible to all and thereby reduce inequities in access to healthier foods.

Inequities in dietary intake and health

In Canada, individuals with lower levels of income, education and those who reside in more socioeconomically disadvantaged neighbourhoods have poorer diet quality than their more advantaged counterparts[224,225]. Evidence also indicates that consumption of ultra-processed and minimally processed foods differs according to race/ethnicity, Indigenous status, food insecurity status, immigrant status, educational attainment, household income and neighbourhood disadvantage[226,227]. These inequities have not improved over time and there is some evidence of widening.

The most recent nationally representative data suggest that adults with lower household incomes had a higher prevalence of obesity[230], diabetes[230] and heart disease[230] compared to those with higher incomes. Those with lower educational attainment had a higher prevalence of raised blood glucose[231], obesity[230], diabetes[230] and heart disease[230] compared to those with higher educational attainment. Indigenous adults and youth had higher rates of obesity than non-Indigenous groups[230]. Finally, among children, immigrants were more likely to have obesity compared to non-immigrants, but this trend reversed among adults[230].

For additional details on dietary and health-related inequities in Canada please consult the following documents on the INFORMAS Canada website: **https://informascanada.com/2025-report**.

- An in-depth look at the quality of population diets in Canada - Results from INFORMAS Canada
- An in-depth look at risk factors for noncommunicable diseases in Canada - Results from INFORMAS Canada
- An in-depth look at rates of diet-related noncommunicable disease morbidity and mortality in Canada - Results from INFORMAS Canada

Policy implications

Efforts to create healthier food environments typically aim to support healthy dietary patterns among the entire population. However, some food environment policies may be more equitable than others. This is because some food environment policies require individuals to exercise greater agency to benefit from them. For instance, individuals must make a conscious choice to look for and use nutrition information on food labels. By contrast, other food environment policies are more structural in nature and do not require individuals to make many or any behavioural changes. Food reformulation is one example of a structural change to the food environment that individuals can benefit from with little to no behavioural changes on their part. It is therefore possible that structural policies may help to enhance dietary and health equity, although evidence to date indicates that most diet-related policies have neutral impacts on dietary inequities regardless of whether they are more agentic or structural in nature[232,233].

Given that there are inequities in exposures to healthy and unhealthy food environments, more research is needed to understand how policy can support more equitable exposures. In addition, research is needed to understand whether individuals with a lower SEP may be more susceptible to the negative impacts of unhealthy food environments and strategies to address this. Research should also continue to examine inequities in exposure to unhealthy food marketing and evaluate the effectiveness of policies in equitably protecting individuals from harmful marketing exposures. Additionally, more robust data are needed to clarify variations in food retail exposures by SEP, and to assess the affordability of healthy diets by SEP subgroups. This includes understanding how food costs and limited access to healthier foods may exacerbate vulnerability to unhealthy food environments and thereby further undermine the quality of individuals' dietary patterns.

Nevertheless, it is important to note that while food environment policies may help to increase exposure to healthier food environments and reduce exposure to less healthy food environments, they do not address the root causes of dietary and health inequities. Therefore, true progress in achieving dietary and health equity can only be realized through social policies that ensure individuals do not face racial discrimination, have adequate incomes, have access to high quality education, and experience optimal childhood conditions, among others. Ultimately, it is only by addressing social inequities that dietary inequities can be reduced or eliminated.

Population Health and Nutrition in Canada

These unhealthy food environments contribute to unhealthy dietary patterns among individuals in Canada, resulting in the occurrence of risk factors and increasing rates of diet-related noncommunicable diseases and poor health and well-being.

Quality of population diet

In 2015, approximately 80% of males and 45% of females consumed sodium in excess[234], and 62% of both males and females consumed saturated fat in excess[235]. Overall, in 2015, 60%[236] of individuals living in Canada (≥1 y) had a free sugar intake that exceeded the WHO recommendation[237]. In addition, in 2015 a substantial proportion of adults in Canada had an inadequate intake of beneficial nutrients such as fibre, potassium, vitamin D and calcium[235].

The proportions of Canadian household expenditures in 2015, 2017 and 2019 for ultra-processed foods were on average between 43% and 45%, and in 2021, around one-fifth of all food expenditures were spent on meals, snacks and beverages in restaurants[238].

Risk factors for noncommunicable diseases

Unhealthy dietary patterns increase the risk of noncommunicable diseases.

Near 17% of youth (5-17 y) and 36% of adults in Canada had a body mass index (BMI) of 25 to <30 kg/m^2 in 2019[233]; one-quarter of adults had hypertension in 2021-2022[239] and 6% of adults had elevated blood glucose[240].

National data from 2016/17 and 2018-19 also indicates that different types of dyslipidemia are present among adults in Canada: 14% of adults had unhealthy levels of LDL cholesterol and 28% had hypercholesterolemia[241].

Rates on noncommunicable diseases morbidity and mortality

These dietary risk factors in turn increase rates of diet-related noncommunicable diseases.

In 2014-2019, more than 10% of youth (5-17 y) and 25% of adults in Canada had obesity[230], as defined by a BMI ≥30 kg/m^2. In 2021-2022, almost 10% of the Canadian population (≥1 y) had diabetes (type 1 or 2), 3% and 9% of adults in Canada had a stroke and lived with diagnosed ischemic heart disease, respectively[231]. In 2017 (excluding Québec), 52.6 Canadians in the general population per 100,000 were diagnosed with colorectal cancer[242.] Based on 2022 data, this cancer was also among the most common type of cancer diagnosed among adults in Canada[243].

For further details on dietary patterns and health outcomes in Canada, please refer to the documents available on the INFORMAS Canada website: **https://informascanada.com/2025-report**.

- An in-depth look at the quality of population diets in Canada - Results from INFORMAS Canada
- An in-depth look at risk factors for noncommunicable diseases in Canada - Results from INFORMAS Canada
- An in-depth look at rates of diet-related noncommunicable disease morbidity and mortality in Canada

Strengths, Challenges and Future Directions

Strengths

Strengths of the INFORMAS Canada study include the use of an internationally-implemented and science-based surveillance framework to monitor food policies, food environments, and population health- and nutrition-related outcomes. As demonstrated in a recent systematic review, food environment research has typically been conducted on one or two policy areas, which does not demonstrate the entirety of the food environment, nor the interconnectedness of these policy areas[199]. INFORMAS Canada has assembled a community of researchers working on food environments across Canada, increasing collaboration, reducing duplication of efforts, leveraging existing research, and increasing return on investment of Canadian research dollars. Involvement of governmental and non-governmental actors throughout the process have ensured that the results are relevant to the Canadian policy context and support policy development.

Challenges

This research synthesis also presents certain limitations. The report relies on existing data for national surveillance, some of which have less recent data. For example, the most recent Canadian Community Health Survey – Nutrition data stem from 2015, and this report relies on food composition data collected between 2017 to 2022. While employing the most recent data available, the time frame for the report covers a longer time period and does not represent one cross-sectional snapshot consistently across all policy areas or outcomes reports.

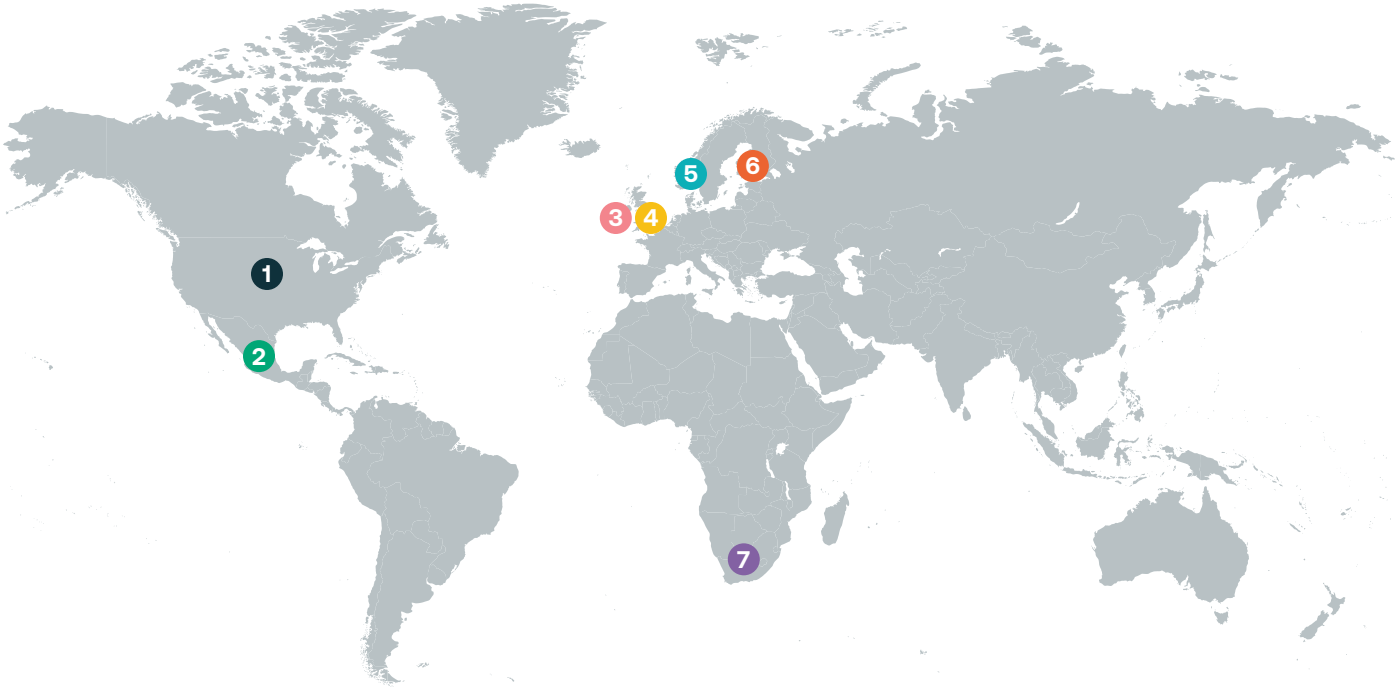
Collecting representative data remains a challenge given Canada's vast geographic area and multitude of provincial and territorial governments who have responsibility for key food environments in public sector settings, which are governed by different ethics committees and require different types of approval before research can be conducted in these spaces. The data collected for schools and hospitals are not nationally representative, and provide a small glimpse into the larger national food environment in these areas.

As this report relied primarily on previously published data, the results are subject to the limitations that are described in original sources. For instance, food companies' actions and commitments related to food environments were assessed but healthiness of company product portfolios or the marketing practices of companies were not examined[41]. Studies about actual exposure to food marketing presented data from a limited number of media markets that may not be representative of the entire country[111,112]. The scraping and matching approach for the digital National Nutritious Food Basket costing measure used to measure the average weekly cost of a nutritious food basket may have may have underestimated local/regional product selection and under- or over-estimated price as it prioritized return of products with high national availability[172].

Future directions

This comprehensive report suggests that food environments in Canada undermine healthy eating. Governmental efforts and voluntary food industry approaches have not been sufficient to create environments that support dietary patterns. Across the globe, countries are implementing innovative policies (see **Figure 21**).

FIGURE 21. **Examples of innovative policies implemented around the globe**



❶ **United States**: maintains the National Health and Nutrition Examination Survey that assesses the health status and diet of adults and children in the US on a yearly basis through interviews and physical examinations, resulting in regular monitoring of dietary intakes[244].

❷ **Mexico:** implemented an excise tax on all drinks with added sugar excluding milks and yogurts, at a rate of 1 peso per litre (approximate increase of 10%)[245].

❸ **Ireland:** has implemented Healthy Weight for Ireland, the Obesity Policy and Action Plan 2016–2025 (OPAP) that recommends actions that should be taken to reverse obesity trends, prevent health complications and reduce the impact of obesity on individuals, families, the health system, and the wider society and economy[246].

❹ **United-Kingdom:** implemented a complete 'watershed' ban on all marketing of all foods that are high in nutrients of concern (i.e., fat, salt and sugar) on television during hours when children may be exposed and restrictions of less healthy food on digital media and at point-of-purchase in stores[137,250,251].

❺ **Norway:** implemented a basic income support pilot program[249].

❻ **Finland:** has the Basic Education Act, whereby all students from pre-primary to secondary school have access to a free and balanced meal on every school day. Funding for school meals is provided by the government and implementing, planning, preparing, and monitoring school meals is led by municipal education authorities[248].

❼ **South Africa:** implemented mandatory maximum salt levels for 13 food categories[63] resulting in reduced sodium in the food supply[247] and reductions in sodium intake[58].

Bold and courageous actions are needed to create healthier food environments for current and future generations

— Food environments would be improved by the implementation of the broad suite of policies recommended by WHO[18].

— Federal policies can substantially contribute to creating healthy food environments by restricting unhealthy food and brand marketing through all forms of media to which children may be exposed, establishing mandatory targets of nutrients of concern in packaged and restaurant foods, implementing inclusive strategies to support the affordability of healthy foods for those with lower incomes, and a sugary drink levy on all sugary drinks, as recommended by food environment experts from across Canada[35].

— Provincial and territorial policies play major roles in shaping many elements of food environments, particularly in the health and education sectors[37]. Provincial and territorial efforts are likely to encourage change at the national level.

— Local government policy equally has the potential to encourage policy change at higher levels. Implementation of rigorous evaluations such as the Local Food-EPI[252] can help identify local policies that could support healthy, sustainable food systems.

— At all levels of government, cross-departmental and cross-ministerial collaboration can support coherent policy and include consideration for health in all food-related policies.

— Not all policies that influence dietary patterns relate to food and nutrition. Effective social policies that address the determinants of health play a major role in supporting healthy dietary patterns, promoting overall health and wellbeing and reducing inequities.

For food environments evaluation and monitoring, priority actions include:

— Institutionalizing food environments surveillance to monitor trends over time, to ensure accountability among governments and food industry

— Increased focus on digital food environments to comprehensively assess this growing are of importance.

— Establishing networks for monitoring in public sector settings like hospitals and schools, as these are areas where no nationally representative data are available

— Increased focus on environmental sustainability, as the importance of creating sustainable food systems that respect planetary limits and will provide healthy food for this generation and the next

— Increasing data to evaluate equity-related environmental determinants, and ensuring the equity considerations are central to the creation of food environment policy

References

1. Institute of Health Metrics and Evaluation (IHME). GBD Compare Data Visualization. 2019; **https://vizhub.healthdata.org/gbd-compare/**.
2. Swinburn B, et al. INFORMAS (International Network for Food and Obesity/non-communicable diseases Research, Monitoring and Action Support): overview and key principles. Obes Rev. 2013;14 Suppl 1:1-12.
3. Health Canada. Health Canada's Healthy Eating Strategy. [Internet]. **https://www.canada.ca/en/services/health/food-nutrition/healthy-eating.html**.
4. Government of Canada. National School Food Policy. 2024; **https://www.canada.ca/en/employment-social-development/programs/school-food/reports/national-policy.html**.
5. Agriculture and Agri-food Canada. A Food Policy for Canada: Everyone at the table. 2019; **https://publications.gc.ca/collections/collection_2020/aac-aafc/A22-628-2019-eng.pdf**.
6. Swinburn BA, et al. The global obesity pandemic: shaped by global drivers and local environments. *The Lancet*. 2011;378(9793):804-814.
7. Atanasova P, et al. The impact of the consumer and neighbourhood food environment on dietary intake and obesity-related outcomes: A systematic review of causal impact studies. *Soc Sci Med.* 2022;299:114879.
8. Cairns G, et al. *The extent, nature and effects of food promotion to children: a review of the evidence to December 2008.* Geneva (Switzerland): World Health Organization;2009.
9. Heart and Stroke Foundation. The kids are not alright: how the food and beverage industry is marketing our children and youth to death. 2017; **https://www.heartandstroke.ca/-/media/pdf-files/canada/2017-heart-month/heartandstrokereportonhealth2017.ashx**.
10. World Health Organization. *Policies to protect children from the harmful impact of food marketing: WHO guideline.* Geneva (Switzerland)2023.
11. Kelly B, et al. A hierarchy of unhealthy food promotion effects: identifying methodological approaches and knowledge gaps. *Am J Public Health.* 2015;105(4):e86-95.
12. Turner C, et al. Food Environment Research in Low- and Middle-Income Countries: A Systematic Scoping Review. *Advances in nutrition (Bethesda, Md).* 2020;11(2):387-397.
13. Swinburn B, et al. Monitoring and benchmarking government policies and actions to improve the healthiness of food environments: a proposed Government Healthy Food Environment Policy Index. *Obes Rev.* 2013;14 Suppl 1:24-37.
14. United Nations System Standing Committee on Nutrition. United Nations Decade of Action on Nutrition 2016-2025. 2018; **https://apps.who.int/gb/ebwha/pdf_files/EB152/B152_24-en.pdf**.
15. World Health Organization. *Global action plan for the prevention and control of noncommunicable diseases 2013-2020.* Geneva (Switzerland): World Health Organization;2013.
16. Development Initiatives. *Global Nutrition Report 2017: Nourishing the SDGs.* Bristol (United Kingdom): Development Initiatives;2017.
17. United Nations. Sustainable Development Goals. **https://sdgs.un.org/goals**.
18. World Health Organization. *WHO acceleration plan to stop obesity.* Geneva (Switzerland): World Health Organization;2023.
19. Swinburn BA, et al. The Global Syndemic of Obesity, Undernutrition, and Climate Change: The Lancet Commission report. *The Lancet.* 2019;393(10173):791-846.
20. HLPE. *Food security and nutrition: building a global narrative towards 2030.* Rome (Italy): High Level Panel of Experts on Food Security and Nutrition;2020.
21. Kirkpatrick SI, et al. Top dietary sources of energy, sodium, sugars, and saturated fats among Canadians: insights from the 2015 Canadian Community Health Survey. *Applied Physiology, Nutrition, and Metabolism.* 2019;44(6):650-658.
22. Health Canada. Table of Reference Amounts for Food. **https://www.canada.ca/en/health-canada/services/technical-documents-labelling-requirements/table-reference-amounts-food.html**.

23. L'Abbé Lab. The Canadian Food Supply. **https://labbelab.utoronto.ca/projects/the-canadian-food-supply/**.

24. Food Quality Observatory. Our mission. **https://offrealimentaire.ca/en**.

25. World Health Organization European Region. *Use of nutrient profile models for nutrition and health policies: meeting report on the use of nutrient profile models in the WHO European Region.* Copenhagen (Denmark): WHO Regional Office for Europe;2022.

26. Health Canada. Front-of-package nutrition symbol labelling guide for industry. Version 2 2023; **https://www.canada.ca/content/dam/hc-sc/documents/services/food-nutrition/legislation-guidelines/guidance-documents/front-package-nutrition-symbol-labelling-industry/front-package-nutrition-symbol-labelling-industry-2.pdf**.

27. Health Canada. Policy update on restricting food advertising primarily directed at children: Appendices. **https://www.canada.ca/en/health-canada/services/food-nutrition/healthy-eating-strategy/policy-update-restricting-food-advertising-primarily-directed-children/appendices-references.html**.

28. Government of Canada. Regulations Amending the Food and Drug Regulations (Nutrition Symbols, Other Labelling Provisions, Vitamin D and Hydrogenated Fats or Oils): SOR/2022-168. In. Vol 156. The Canada gazette, Part II2022:3457-3629.

29. Government of Canada. Nutrition labelling: Table of permitted nutrient content statements and claims. 2022; **https://www.canada.ca/en/health-canada/services/technical-documents-labelling-requirements/table-permitted-nutrient-content-statements-claims/table-document.html**#a4.

30. Monteiro CA. Nutrition and health. The issue is not food, nor nutrients, so much as processing. *Public Health Nutr.* 2009;12(5):729-731.

31. Monteiro CA, et al. The UN Decade of Nutrition, the NOVA food classification and the trouble with ultra-processing. *Public Health Nutr.* 2018;21(1):5-17.

32. Martinez-Steele E, et al. Best practices for applying the Nova food classification system. *Nat Food.* 2023;4(6):445-448.

33. Government of Canada. Marketing Authorization to Permit a Lower Calcium Threshold for Exemptions from the Requirement for Prepackaged Products to Carry a Nutrition Symbol in the Case of Cheese, Yogurt, Kefir and Buttermilk: SOR/2024-89. In. Vol 158. The Canada gazette, Part II2024.

34. Swinburn B, et al. Monitoring and benchmarking government policies and actions to improve the healthiness of food environments: a proposed Government Healthy Food Environment Policy Index. *Obesity Reviews.* 2013;14(S1):24.

35. Vanderlee L, et al. *Actions to cultivate healthier food environments in Canada: Federal government policies and progress, 2023.* 2023.

36. Vanderlee L, et al. *Creating healthier food environments in Canada: Current policies and priority actions - Summary report.* Toronto: University of Toronto;2017.

37. INFORMAS Canada. Food-EPI Canada 2023. **https://informascanada.com/methods/food-epi-canada-2023**.

38. World Health Organization. *Global Strategy on Diet, Physical Activity and Health.* Geneva (Switzerland): World Health Organization;2004.

39. World Health Organization. *Draft comprehensive global monitoring framework and targets for the prevention and control of noncommunicable diseases.* Geneva (Switzerland): World Health Organization;2013.

40. Gaucher-Holm A, et al. The structure of the Canadian packaged food and non-alcoholic beverage manufacturing and grocery retailing sectors through a public health lens. *Globalization and Health.* 2023;19(1):18.

41. Vanderlee L, et al. *Benchmarking food and beverage company policies to support healthier population diets in Canada, 2023. Packaged food and non-alcoholic beverage manufacturing sector report.* Québec City, QC (Canada)2023.

42. Gaucher-Holm A, et al. Food and beverage manufacturing and retailing company policies and commitments to improve the healthfulness of Canadian food environments. *BMC Public Health.* 2024;24(1):2419.

43. Vanderlee L, et al. *Food and beverage manufacturers in Canada: Policies and commitments to improve the food environment, 2019.* Toronto: The University of Toronto;2019.

44. Health Canada. Sodium Reduction in Processed Foods in Canada: An Evaluation of Progress toward Voluntary Targets from 2012 to 2016. 2018; **https://www.canada.ca/en/health-canada/services/food-nutrition/legislation-guidelines/guidance-documents/guidance-food-industry-reducing-sodium-processed-foods-progress-report-2017.html**.

45. Health Canada. Voluntary sodium reduction targets for processed foods 2020-2025. **https://www.canada.ca/en/health-canada/services/publications/food-nutrition/sodium-reduced-targets-2020-2025.html**.

46. Bernstein JT, et al. Reformulation of sugar contents in Canadian prepackaged foods and beverages between 2013 and 2017 and resultant changes in nutritional composition of products with sugar reductions. *Public Health Nutrition.* 2020;23(16):2870-2878.

47. Government of Canada. Notice of modification: Prohibiting the use of partially hydrogenated oils (PHOs) in foods. **https://inspection.canada.ca/food-safety-for-industry/food-safety-standards-guidelines/notice-of-modification-phos/eng/1536939719584/1536939792275**.

48. Arcand J, et al. Examination of food industry progress in reducing the sodium content of packaged foods in Canada: 2010 to 2013. *Applied Physiology, Nutrition and Metabolism.* 2016;41(6):684-690.

49. Government of Canada. Canadian Ban on Trans Fats Comes into Force Today. 2018; **https://www.canada.ca/en/health-canada/news/2018/09/canadian-ban-on-trans-fats-comes-into-force-today.html**.

50. Vergeer L, et al. A comparison of the nutritional quality of products offered by the top packaged food and beverage companies in Canada. *BMC public health.* 2020;20(1):650.

51. Franco-Arellano B, et al. Examining the nutritional quality of Canadian packaged foods and beverages with and without nutrition claims. *Nutrients.* 2018;10(7):832.

52. Labonte ME, et al. Comparison of global nutrient profiling systems for restricting the commercial marketing of foods and beverages of low nutritional quality to children in Canada. *American Journal of Clinical Nutrition.* 2017;106(6):1471-1481.

53. Observatory for the quality of the food supply. Food Supply follow-up (2021-2026). **https://offrealimentaire.ca/en/food-supply-follow-up-2021-2026**.

54. Yang Y, et al. Cross-Sectional Nutritional Information and Quality of Canadian Chain Restaurant Menu Items in 2020. *Am J Prev Med.* 2023;64(1):42-50.

55. Government of Canada. Nutrition labelling: Nutrition facts table. **https://www.canada.ca/en/health-canada/services/food-nutrition/nutrition-labelling/nutrition-facts-tables.html**.

56. Government of Canada. Nutrition labelling – Table of daily values. 2022; **https://www.canada.ca/en/health-canada/services/technical-documents-labelling-requirements/table-daily-values/nutrition-labelling.html**.

57. Jeong H, et al. Evaluating the application of front-of-package labelling regulations to menu labelling in the Canadian restaurant sector using Menu Food Label Information and Price (Menu-FLIP) 2020 data. *Public Health Nutrition*. 2024:1-22.

58. Charlton KE, et al. Effect of South Africa's interim mandatory salt reduction programme on urinary sodium excretion and blood pressure. *Prev Med Rep.* 2021;23:101469.

59. International Food Policy Research Institute (IFPRI). Global Nutrition Report 2016: From Promise to Impact: Ending Malnutrition by 2030. In: Washington, DC (United States)2016.

60. Flexner N, et al. The potential health impact and healthcare cost savings of different sodium reduction strategies in Canada. *medRxiv.* 2023:2023.2011.2002.23297997.

61. Flexner N, et al. How Many Diet-Related Non-Communicable Disease Deaths Could Be Averted or Delayed If Canadians Reduced Their Consumption of Calories Derived from Free Sugars Intake? A Macrosimulation Modeling Study. *Nutrients.* 2023;15(8):1835.

62. Ley 26.05 Promoción de la reducción del consumo de sodio en la población. 2013; **http://www.saij.gob.ar/26905-nacional-promocion-reduccion-consumo-sodio-poblacion-lns0005889-2013-11-13/123456789-0abc-defg-g98-85000scanyel**.

63. Rosewarne E, et al. A Global Review of National Strategies to Reduce Sodium Concentrations in Packaged Foods. *Advances in Nutrition.* 2022;13(5):1820-1833.

64. Australian Government. Healthy Food Partnership. **https://www.health.gov.au/our-work/healthy-food-partnership**.

65. Action on Sugar and WASSH. What is next ? The UK's sugar reduction programme. 2022; **https://www.actiononsugar.org/media/actiononsugar/sugar-awareness-week/2022/The-UK's-Sugar-Reduction-Programme-What-is-Next-(final).pdf**.

66. City of New York. National Salt and Sugar Reduction Initiative (NSSRI). **https://www.nyc.gov/site/doh/health/health-topics/national-salt-sugar-reduction-initiative.page#:~:text=The%20National%20Salt%20and%20Sugar,to%20commit%20to%20meeting%20them**.

67. Quintiliano Scarpelli D, et al. Changes in Nutrient Declaration after the Food Labeling and Advertising Law in Chile: A Longitudinal Approach. *Nutrients.* 2020;12(8):2371.

68. Reyes M, et al. Changes in the amount of nutrient of packaged foods and beverages after the initial implementation of the Chilean Law of Food Labelling and Advertising: A nonexperimental prospective study. *PLOS Medicine.* 2020;17(7):e1003220.

69. Government of Canada. Regulations amending the Food and Drug Regulations (nutrition labelling, nutrient content claims and health claims). In. Vol 137. The Canada gazette, Part II2003:154-403.

70. Health Canada. Food labelling changes. **https://www.canada.ca/en/health-canada/services/food-labelling-changes.html**.

71. Government of Canada. Regulations Amending the Food and Drug Regulations (Nutrition Symbols, Other Labelling Provisions, Vitamin D and Hydrogenated Fats or Oils): SOR/2022-168. In. Vol 156. The Canada gazette, Part II 2022:3457-3629.

72. Health Canada. Nutrition labelling: Nutrition claims. **https://www.canada.ca/en/health-canada/services/understanding-food-labels/nutrition-claims.html#a4**.

73. Rayner M, et al. INFORMAS Protocol: Food Labelling Module. 2017.

74. Health Canada. Nutrition claims. **http://www.hc-sc.gc.ca/fn-an/label-etiquet/nutrition/cons/claims-reclam/index-eng.php**.

75. Health Canada. Health Claims. **https://www.canada.ca/en/health-canada/services/food-nutrition/food-labelling/health-claims.html**.

76. Canadian Food Inspection Agency. Food Labelling for Industry. **https://inspection.canada.ca/food-labels/labelling/industry/eng/1383607266489/1383607344939**.

77. Canadian Food Inspection Agency. Food composition and quality claims. **https://inspection.canada.ca/food-labels/labelling/industry/composition-and-quality/eng/1625516122300/1625516122800**.

78. Canadian Food Inspection Agency. Allergen-free, gluten-free and cross contamination statements. **https://inspection.canada.ca/food-labels/labelling/industry/allergens-and-gluten/eng/1388152325341/1388152326591**.

79. Canadian Food Inspection Agency. Method of production claims on food labels. **https://bmcnutr.biomedcentral.com/articles/10.1186/s40795-017-0192-9**.

80. Canadian Food Inspection Agency. General health claims. **https://inspection.canada.ca/food-labels/labelling/industry/health-claims-on-food-labels/eng/1392834838383/1392834887794?chap=12**.

81. Global Health Advocacy Incubator. FOPWL regulations around the globe. 2023; **https://assets.advocacyincubator.org/uploads/2023/FOPWL_Regulations.pdf**.

82. Saavedra-Garcia L, et al. Marketing techniques, health, and nutritional claims on processed foods and beverages before and after the implementation of mandatory front-of-package warning labels in Peru. *Frontiers in Nutrition.* 2022;9.

83. Potvin Kent M, et al. Benchmarking unhealthy food marketing to children and adolescents in Canada: a scoping review. *Health Promot Chronic Dis Prev Can.* 2022;42(8):307-318.

84. Prowse R. Food marketing to children in Canada: a settings-based scoping review on exposure, power and impact. *Health Promot Chronic Dis Prev Can.* 2017;37(9):274-292.

85. Boyland E, et al. Association of Food and Nonalcoholic Beverage Marketing With Children and Adolescents' Eating Behaviors and Health: A Systematic Review and Meta-analysis. *JAMA Pediatr.* 2022;176(7):e221037.

86. World Health Organization. *Food marketing exposure and power and their associations with food-related attitudes, beliefs and behaviours: a narrative review.* Copenhagen (Denmark)2022.

87. Sadeghirad B, et al. Influence of unhealthy food and beverage marketing on children's dietary intake and preference: a systematic review and meta-analysis of randomized trials. *Obes Rev.* 2016;17(10):945-959.

88. Boyland EJ, et al. Advertising as a cue to consume: a systematic review and meta-analysis of the effects of acute exposure to unhealthy food and nonalcoholic beverage advertising on intake in children and adults. *Am J Clin Nutr.* 2016;103(2):519-533.

89. Rozendaal E, et al. Comparing children's and adults' cognitive advertising competences in the Netherlands. *Journal of Children and Media.* 2010;4(1):77-89.

90. Truman E, et al. Identifying food marketing to teenagers: a scoping review. *Int J Behav Nutr Phys Act.* 2019;16(1):67.

91. Boyland E, et al. Exposure, Power and Impact of Food Marketing on Children: Evidence Supports Strong Restrictions. *European Journal of Risk Regulation.* 2017;8(2):224-236.

92. Government of Canada. *Bill S-228: An Act to amend the Food and Drugs Act (prohibiting food and beverage marketing directed at children).* 2019.

93. Government of Canada. Bill C-252: An Act to amend the Food and Drugs Act (prohibition of food and beverage marketing directed at children). 2022; **https://www.parl.ca/legisinfo/en/bill/44-1/c-252**.

94. Government of Canada. Food and Drugs Act. **https://www.canada.ca/en/health-canada/corporate/about-health-canada/legislation-guidelines/acts-regulations/forward-regulatory-plan/plan.html#a6**.

95. Ads Standard. The Broadcast Code for Advertising to Children. **https://adstandards.ca/preclearance/advertising-preclearance/childrens/childrens-code/**.

96. Advertising Standards Canada. Code for the Responsible Advertising of Food and Beverage Products to Children 2023; **https://adstandards.ca/wp-content/uploads/FoodAndBeverageAdvertisingCode-FINAL-20230505.pdf**.

97. Government of Québec. Consumer Protection Act. 1978; **https://www.legisquebec.gouv.qc.ca/en/pdf/cs/P-40.1.pdf**.

98. Potvin Kent M, et al. Food and beverage advertising expenditures in Canada in 2016 and 2019 across media. *BMC Public Health.* 2022;22(1):1458.

99. Potvin Kent M. *Monitoring Food and Beverage Marketing to Children: A Canadian Framework.* Ottawa (Canada): University of Ottawa;2018.

100. Potvin Kent M, et al. The food and beverage marketing monitoring framework for Canada: Development, implementation, and gaps. *Food Policy.* 2024;122:102587.

101. Health Canada. Monitoring Food Marketing to Children: A Protocol for Classifying Foods. Working Draft. Unpublished. 2021.

102. Health Canada. Monitoring food and beverage marketing to children: Indicators of marketing techniques to be tracked across marketing media and settings. Version 1.0. Unpublished. 2022.

103. Health Canada. *Monitoring food and beverage marketing to children: Indicators of marketing techniques to be tracked across marketing media and settings. Version 2.0. Unpublished.* 2022.

104. Health Canada. Monitoring Food and Beverage Marketing to Children: Indicators of marketing techniques to be tracked across marketing media and settings, version 3.0. Unpublished. 2022.

105. Health Canada. Health Canada's proposed nutrient profile model for restricting marketing to children. 2019.

106. Statistics Canada. Physical activity and screen time among Canadian children and youth, 2016 and 2017. 2019; **https://www150.statcan.gc.ca/n1/pub/82-625-x/2019001/article/00003-eng.htm**.

107. Summerfield P. Canadian kids spend less time watching linear TV as they age. *Media in Canada.* 2022.

108. Kelly B, et al. Monitoring food and non-alcoholic beverage promotions to children. *Obesity Reviews.* 2013;14:59-69.

109. Kelly B, et al. Global benchmarking of children's exposure to television advertising of unhealthy foods and beverages across 22 countries. Obes Rev. 2019;20 Suppl 2(Suppl 2):116-128.

110. Potvin Kent M, et al. Child and Youth Exposure to Unhealthy Food and Beverage Marketing on Television in Canada in 2019: A report to Health Canada. 2021.

111. Potvin Kent M, et al. Differences in child and adolescent exposure to unhealthy food and beverage advertising on television in a self-regulatory environment. *BMC Public Health.* 2023;23(1):555.

112. Potvin Kent M, et al. Broadcast Television Is Not Dead: Exposure of Children to Unhealthy Food and Beverage Advertising on Television in Two Policy Environments (Ontario and Québec). An Observational Study. *The Journal of Nutrition.* 2023;153(1):268-278.

113. Statista. Mobile phone usage among children and teens in Canada as of April 2022, by age group. 2024; **https://www.statista.com/statistics/1319950/canada-mobile-usage-kids-and-teens-by-age/**.

114. Leatherdale ST, et al. Examining communication- and media-based recreational sedentary behaviors among Canadian youth: results from the COMPASS study. *Prev Med.* 2015;74:74-80.

115. Powell LM, et al. Food marketing expenditures aimed at youth: putting the numbers in context. *Am J Prev Med.* 2013;45(4):453-461.

116. Potvin Kent M, et al. Child and adolescent exposure to unhealthy food marketing across digital platforms in Canada. *BMC Public Health.* 2024;24(1):1740.

117. Potvin Kent M, et al. #junkfluenced: the marketing of unhealthy food and beverages by social media influencers popular with Canadian children on YouTube, Instagram and TikTok. *International Journal of Behavioral Nutrition and Physical Activity.* 2024;21(1):37.

118. Signal LN, et al. Children's everyday exposure to food marketing: an objective analysis using wearable cameras. *Int J Behav Nutr Phys.* 2017;14(1):137.

119. Glanz K, et al. Healthy nutrition environments: concepts and measures. *Am J Health Promot.* 2005;19(5):330-333, ii.

120. Marketing charts. 3 in 4 Grocery Purchase Decisions Being Made In-Store. 2012; **https://www.marketingcharts.com/industries/retail-and-e-commerce-22094**.

121. Statistics Canada. Eating out: How often and why? 2019; **https://www150.statcan.gc.ca/n1/pub/11-627-m/11-627-m2019003-eng.htm**.

122. Minaker LM. Point-of-Sale Marketing to Children in Canada Evidence from 11 cities 2023; **https://www.heartandstroke.ca/what-we-do/media-centre/news-releases/marketing-to-kids-glut-in-restaurants-stores-raises-concerns**.

123. Statistics Canada. The Canadian Index of Multiple Deprivation User Guide. 2019; **https://www150.statcan.gc.ca/n1/pub/45-20-0001/452000012019002-eng.htm**.

124. Minaker, L. et al. Point-of-Sale Marketing to Children in Canada: evidence of socioeconomic inequities. Unpublished data. 2024.

125. Prowse RJL, et al. Reliability and validity of a novel tool to comprehensively assess food and beverage marketing in recreational sport settings. *Int J Behav Nutr Phys.* 2018;15(38).

126. Prowse R, et al. *Monitoring Food Promotion in Recreation Facilities in Canada: Phase 2 Final.* Unpublished data. March 2023.

127. National Center for Educational Statistics. Average number of hours in the school day and average number of days in the school year for public schools, by state: 2007–08. **https://nces.ed.gov/surveys/sass/tables/sass0708_035_s1s.asp**.

128. Statistics Canada. Population centre (POPCTR). 2021; **https://www12.statcan.gc.ca/census-recensement/2021/ref/dict/az/definition-eng.cfm?ID=geo049a**.

129. Vanderlee L, et al. School Food Environment Surveys in Canada – Final Report. 2024; **https://informascanada.com/publications**.

130. Vanderlee L, et al. Hospital food environments in Canada: a cross-sectional study. Unpublished data. 2024.

131. Watt T, et al. The impact of price promotions on sales of unhealthy food and drink products in British retail stores. *Health Economics.* 2023;32(1):25-46.

132. Backholer K, et al. Food and Beverage Price Promotions: an Untapped Policy Target for Improving Population Diets and Health. *Curr Nutr Rep.* 2019;8(3):250-255.

133. Trapp G, et al. Exposure to unhealthy food and beverage advertising during the school commute in Australia. *J Epidemiol Community Health.* 2021;75(12):1232-1235.

134. Finlay A, et al. A scoping review of outdoor food marketing: exposure, power and impacts on eating behaviour and health. *BMC Public Health.* 2022;22(1):1431.

135. Trapp G, et al. Children's exposure to outdoor food advertising near primary and secondary schools in Australia. *Health Promot J Austr.* 2022;33(3):642-648.

136. Morielli A, et al. Exploring outdoor food and beverage advertising around schools in six Canadian cities: prevalence and differences by geographic locale and dimensions of marginalization. *Unpublished.* 2024.

137. Government of the United Kingdom DoHaSC, Department for Digital Culture, Media & Sport,,. Further advertising restrictions for products high in fat, salt and sugar. 2021; **https://www.gov.uk/government/consultations/further-advertisingrestrictions-for-products-high-in-fat-salt-and-sugar**.

138. United Kingdom Parliament. Implementation of advertising restrictions for less healthy food and drink on television and online. 2024; **https://questions-statements.parliament.uk/written-statements/detail/2024-09-12/hcws93**.

139. Department of Health and Social Care. Restricting promotions of products high in fat, sugar or salt by location and by volume price: implementation guidance. 2023; **https://www.gov.uk/government/publications/restricting-promotions-of-products-high-in-fat-sugar-or-salt-by-location-and-by-volume-price/restricting-promotions-of-products-high-in-fat-sugar-or-salt-by-location-and-by-volume-price-implementation-guidance**.

140. World Health Organization. *Action framework for developing and implementing public food procurement and service policies for a healthy diet.* Geneva (Switzerland)2021.

141. Raine KD, et al. Healthy food procurement and nutrition standards in public facilities: evidence synthesis and consensus policy recommendations. *Health Promot Chronic Dis Prev Can.* 2018;38(1):6-17.

142. World Health Organization. *Healthy and sustainable diets: key workstreams in the WHO European Region: factsheet 2021.* Copenhagen (Denmark) 2021.

143. Swensson LFJ, et al. Public food procurement as a game changer for food system transformation. *Lancet Planet Health.* 2021;5(8):e495-e496.

144. Government of Canada. Food guide friendly initiative. **https://food-guide.canada.ca/en/food-guide-friendly-initiative/**.

145. Government of Canada. National School Food Policy. **https://www.canada.ca/en/employment-social-development/programs/school-food/reports/national-policy.html**.

146. Caswell S, et al. Recreation Facility Food and Beverage Environments in Ontario, Canada: An Appeal for Policy. *International Journal of Environmental Research and Public Health.* 2021;18(15):8174.

147. McIsaac J-LD, et al. The Association between Perceived Adequacy and Capacity for School Food Policy Implementation with Food Availability and Policy Adherence in Nova Scotia, Canada. *International Journal of Environmental Research and Public Health.* 2019;16(11):1974.

148. Shaw S, et al. Influences of the community and consumer nutrition environment on the food purchases and dietary behaviors of adolescents: A systematic review. *Obesity Reviews.* 2023;24(7):e13569.

149. da Costa Peres CM, et al. Retail food environment around schools and overweight: a systematic review. *Nutrition Reviews.* 2020;78(10):841-856.

150. Crawford F, et al. Observation and assessment of the nutritional quality of 'out of school' foods popular with secondary school pupils at lunchtime. *BMC Public Health.* 2017;17(1):887.

151. Shaw SC, et al. A systematic review of the influences of food store product placement on dietary-related outcomes. *Nutrition Reviews.* 2020;78(12):1030-1045.

152. Fildes A, et al. Impact on purchasing behaviour of implementing 'junk free checkouts': A pre-post study. *Nutrition Bulletin.* 2022;47(3):333-345.

153. Cutumisu N, et al. Association between junk food consumption and fast-food outlet access near school among Québec secondary-school children: findings from the Québec Health Survey of High School Students (QHSHSS) 2010-11. *Public Health Nutrition.* 2017;20(5):927-937.

154. Lee JJ, et al. The Availability and Quality of Food Labelling Components in the Canadian E-Grocery Retail Environment. *Nutrients.* 2021;13(8):2611.

155. Vanderlee L, et al. Availability of calorie information on online food delivery service platforms among major chain restaurants in Canadian provinces with different calorie labelling policies. *Can J Public Health.* 2023.

156. Rahilly J, et al. Changes in the number of new takeaway food outlets associated with adoption of management zones around schools: A natural experimental evaluation in England. *SSM - Population Health.* 2024;26:101646.

157. Rahilly J, et al. Changes in the number and outcome of takeaway food outlet planning applications in response to adoption of management zones around schools in England: A time series analysis. *Health Place.* 2024;87:103237.

158. Government of Ontario. Healthy Menu Choices Act, 2015 (S.O. 2015, c.7, Sched. 1). **https://www.ontario.ca/laws/statute/15h07**.

159. Government of the United Kingdom. The Food (Promotion and Placement) (England) Regulations 2021. 2021; **https://www.legislation.gov.uk/uksi/2021/1368/made**.

160. Ministère du travail de la santé et des solidarités. Interdiction de la mise à disposition de boissons à volonté. 2017; **https://sante.gouv.fr/prevention-en-sante/preserver-sa-sante/nutrition/boissons-a-volonte**.

161. Brimblecombe J, et al. Effect of restricted retail merchandising of discretionary food and beverages on population diet: a pragmatic randomised controlled trial. *The Lancet Planetary Health.* 2020;4(10):e463-e473.

162. Herforth A, et al. *Cost and affordability of healthy diets across and within countries. Background paper for The State of Food Security and Nutrition in the World 2020.* Rome (Italy) 2020.

163. Statistics Canada. Research to Insights: Consumer price inflation, recent trends and analysis. 2023; **https://www150.statcan.gc.ca/n1/pub/11-631-x/11-631-x2023003-eng.htm**.

164. Statistics Canada. Market Basket Measure (MBM). 2022; **https://www12.statcan.gc.ca/census-recensement/2021/ref/dict/az/Definition-eng.cfm?ID=pop165**.

165. Statistics Canada. Defining disposable income in the Market Basket Measure. 2019; **https://www150.statcan.gc.ca/n1/pub/75f0002m/75f0002m2019014-eng.htm**.

166. Fafard St-Germain AA, et al. Prioritization of the essentials in the spending patterns of Canadian households experiencing food insecurity. *Public Health Nutr.* 2018;21(11):2065-2078.

167. Hutchinson J, et al. The relationship between diet quality and the severity of household food insecurity in Canada. *Public Health Nutr.* 2022;25(4):1013-1026.

168. Statistics Canada. Insights on Canadian Society - Food insecurity among Canadian families. 2023; **https://www150.statcan.gc.ca/n1/pub/75-006-x/2023001/article/00013-eng.htm**.

169. Research to Identify Policy Options to Reduce Food Insecurity (PROOF). New data on household food insecurity in 2023. 2024; **https://proof.utoronto.ca/2024/new-data-on-household-food-insecurity-in-2023/**.

170. Statistics Canada. Rising prices are affecting the ability to meet day-to-day expenses for most Canadians. June 2022; **https://www150.statcan.gc.ca/n1/daily-quotidien/220609/dq220609a-eng.htm**.

171. Mackay S, et al. INFORMAS protocol: Food prices module. 2017; **https://figshare.com/articles/journal_contribution/INFORMAS_Protocol_Food_Prices_Module/5627440**.

172. Taylor NGA, et al. Observational study of population level disparities in food costs in 2021 in Canada: A digital national nutritious food basket (dNNFB). *Prev Med Rep.* 2023;32:102162.

173. WILDE PE, et al. Using the Thrifty Food Plan to Assess the Cost of a Nutritious Diet. *Journal of Consumer Affairs.* 2009;43(2):274-304.

174. Ziraldo E, et al. An evaluation of the relationship between total and free sugar content and product price in food categories that are top contributors to Canadian's free sugar intakes. *Applied Physiology, Nutrition, and Metabolism.* 2023;48:S56.

175. Ziraldo ER, et al. Investigating reformulation in the Canadian food supply between 2017 and 2020 and its impact on food prices. *Public Health Nutrition* 2024;27(1):e257.

176. Food Standards Australia New Zealand (FSANZ). *Short guide for industry to the Nutrient Profiling Scoring Criterion in Standard 1.2.7 – Nutrition, health and related Claims.* 2016.

177. Rochefort G, et al. Adhering to Canada's Food Guide Recommendations on Healthy Food Choices Increases the Daily Diet Cost: Insights from the PREDISE Study. *Nutrients.* 2022;14(18).

178. Quality of Care NL. Practices Points, Volume 10. 2023; **https://qualityofcarenl.ca/practice-points/#:~:text=Practice%20Points%20Volume%2010%20was,from%20the%20Table%20of%20Contents**.

179. Emery JCH, et al. Legislated changes to federal pension income in Canada will adversely affect low income seniors' health. *Preventive Medicine.* 2013;57(6):963-966.

180. Fafard St-Germain A-A, et al. Homeownership status and risk of food insecurity: examining the role of housing debt, housing expenditure and housing asset using a cross-sectional population-based survey of Canadian households. *International Journal for Equity in Health.* 2020;19(1):5.

181. Men F, et al. Employment Insurance may mitigate impact of unemployment on food security: Analysis on a propensity-score matched sample from the Canadian Income Survey. *Preventive Medicine.* 2023;169:107475.

182. Men F, et al. Effect of Canada Child Benefit on Food Insecurity: A Propensity Score-Matched Analysis. *American Journal of Preventive Medicine.* 2023;64(6):844-852.

183. Gaucher-Holm A, et al. The structure of the Canadian packaged food and non-alcoholic beverage manufacturing and grocery retailing sectors through a public health lens. *Global Health.* 2023;19(1):18.

184. Competition Bureau Canada. *Canada needs more grocery competition: Competition bureau retail grocery market study report.* Ottawa (Canada): Competition Bureau Canada;2023.

185. Government of Canada. Competition Bureau advances investigations into Sobeys and Loblaw's use of property controls. 2024; **https://www.canada.ca/en/competition-bureau/news/2024/06/competition-bureau-advances-investigations-into-sobeys-and-loblaws-use-of-property-controls.html**.

186. Schram et al. Monitoring the impacts of international trade and investment agreements on food environments: a Canadian case study. Unpublished data. 2024.

187. Government of Canada. Canadian customs tariff. **https://www.cbsa-asfc.gc.ca/trade-commerce/tariff-tarif/menu-eng.html**.

188. United Nations. UN Comtrade Database. **https://comtradeplus.un.org/**.

189. Statistics Canada. North American Industry Classification System (NAICS) Canada 2017 Version 3.0. **https://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=1181553**.

190. World Trade Organization. WHO Dat - Information on trade and trade policy measures. **https://data.wto.org/en**.

191. World Health Organization. *Digital food environments.* Copenhagen (Denmark) 2021.

192. Granheim SI, et al. Mapping the digital food environment: A systematic scoping review. *Obes Rev.* 2022;23(1):e13356.

193. Fernandez MA, et al. Digital Food Retail: Public Health Opportunities. *Nutrients.* 2021;13(11).

194. Statista. Online Food Delivery – Worldwide. **https://www.statista.com/outlook/dmo/online-food-delivery/worldwide**.

195. Passport by Euromonitor. Grocery E-commerce in Canada (Retail Value RSP).

196. Passport by Euromonitor. Third-Party Delivery - Foodservice E-commerce in Canada (Retail Value RSP).

197. Gupta A, et al. Use of online food delivery services among adults in five countries from the International Food Policy Study 2018–2021. *Preventive Medicine Reports.* 2024;43:102766.

198. Keeble M, et al. Use of Online Food Delivery Services to Order Food Prepared Away-From-Home and Associated Sociodemographic Characteristics: A Cross-Sectional, Multi-Country Analysis. *International Journal of Environmental Research & Public Health* 2020;17(14):17.

199. Vaillancourt C, et al. Food environment research in Canada: a rapid review of methodologies and measures deployed between 2010 and 2021. *Int J Behav Nutr Phys Act.* 2024;21(1):18.

200. World Health Organization Regional Office for Europe. *Tackling food marketing to children in a digital world: trans-disciplinary perspectives.* Copenhagen (Denmark) 2016.

201. Potvin Kent M, et al. Normalizing junk food: The frequency and reach of posts related to food and beverage brands on social media. *PLOS Digital Health.* 3(10).

202. Olzenak K, et al. How Online Grocery Stores Support Consumer Nutrition Information Needs. *J Nutr Educ Behav.* 2020;52(10):952-957.

203. Brar K, et al. Geographic reach and nutritional quality of foods available from mobile online food delivery service applications: novel opportunities for retail food environment surveillance. *BMC Public Health.* 2021;21(1):458.

204. Granheim SI. The digital food environment *UNSCN Nutrition.* 2019(44):115-221.

205. Palmer G, et al. A deep learning approach to identify unhealthy advertisements in street view images. *Scientific Reports.* 2020;11.

206. Olstad DL, et al. Leveraging artificial intelligence to monitor unhealthy food and brand marketing to children on digital media. *Lancet Child Adolesc Health.* 2020;4(6):418-420.

207. Deakin University. Monitoring advertising to improve children's health. **https://www.deakin.edu.au/research/impact-stories/monitoring-advertising-to-improve-childrens-health**

208. Potvin Kent M, et al. Fast Food & Dine-In Restaurant Apps and Children's Privacy:. 2023; **https://www.heartandstroke.ca/-/media/pdf-files/advocacy/monique-potvin-kent-privacy-report-en.pdf**.

209. Revenu Québec. 458 - Tax credit for home - Support services for seniors. **https://www.revenuquebec.ca/en/citizens/income-tax-return/completing-your-income-tax-return/how-to-complete-your-income-tax-return/line-by-line-help/451-to-480-refund-or-balance-due/line-458/**.

210. USDA Food and Nutrition Service. Stores Accepting SNAP Online. **https://www.fns.usda.gov/snap/online-purchasing-pilot**.

211. World Health Organization. *Equity, social determinants and public health programmes / editors Erik Blas and Anand Sivasankara Kurup.* Geneva (Switzerland): World Health Organization;2010.

212. Statistics Canada. The Canadian Index of Multiple Deprivation - User Guide, 2021. 2023; **https://www150.statcan.gc.ca/n1/pub/45-20-0001/452000012023002-eng.htm**.

213. Smith BT, et al. The Equity and Effectiveness of Achieving Canada's Voluntary Sodium Reduction Guidance Targets: A Modelling Study Using the 2015 Canadian Community Health Survey—Nutrition. *Nutrients.* 2021;13(3).

214. Acton RB, et al. Examining differences in children and adolescents' exposure to food and beverage marketing in Canada by sociodemographic characteristics: Findings from the International Food Policy Study Youth Survey, 2020. *Pediatric Obesity.* 2023;18(6):e13028.

215. Bragg MA, et al. Evaluating the influence of racially targeted food and beverage advertisements on Black and White adolescents' perceptions and preferences. *Appetite.* 2019;140:41-49.

216. Slater J, Epp-Koop S, Jakilazek M, Green C. Food deserts in Winnipeg, Canada: a novel method for measuring a complex and contested construct. *Health Promotion and Chronic Disease Prevention in Canada.* 2017;37(10):350-356.

217. Ravensbergen L, Buliung R, Wilson K, Faulkner G. "Socioeconomic inequalities in children's accessibility to food retailing: Examining the roles of mobility and time". *Social Science & Medicine*. 2016;153:81-89.

218. Canto S, Engler-Stringer R, Muhajarine N. Characterizing Saskatoon's food environment: A neighbourhood-level analysis of in-store fruit and vegetable access. *Canadian Journal of Urban Research*. 2015;24:62-77.

219. Morin P, Demers K, Robitaille É, Lebel A, Bisset S. Do schools in Quebec foster healthy eating? An overview of associations between school food environment and socio-economic characteristics. *Public Health Nutrition*. 2015;18(9):1635-1646.

220. DuBreck CM, Sadler RC, Arku G, Gilliland JA. Examining community and consumer food environments for children: An urban-suburban-rural comparison in Southwestern Ontario. *Social Science & Medicine*. 2018;209:33-42.

221. Minaker LM, Shuh A, Olstad DL, Engler-Stringer R, Black JL, Mah CL. Retail food environments research in Canada: A scoping review. *Can J Public Health*. 2016;107(Suppl 1):5344.

222. Wang J, Engler-Stringer R, Muhajarine N. Assessing the consumer food environment in restaurants by neighbourhood distress level across Saskatoon, Saskatchewan. *Can J Diet Pract Res*. 2016;77(1):9-16.

223. Luan H, Minaker LM, Law J. Do marginalized neighbourhoods have less healthy retail food environments? An analysis using Bayesian spatial latent factor and hurdle models. *International Journal of Health Geographics*. 2016;15(1):29.

224. Olstad DL, Nejatinamini S, Victorino C, Kirkpatrick SI, Minaker LM, McLaren L. Socioeconomic inequities in diet quality among a nationally representative sample of adults living in Canada: an analysis of trends between 2004 and 2015. *The American Journal of Clinical Nutrition*. 2021;114(5):1814-1829.

225. Olstad DL, Nejatinamini S, Victorino C, Kirkpatrick SI, Minaker LM, McLaren L. Trends in Socioeconomic Inequities in Diet Quality between 2004 and 2015 among a Nationally Representative Sample of Children in Canada. *The Journal of Nutrition*. 2021;151(12):3781-3794.

226. Olstad DL, Nejatinamini S, Blanchet R, et al. Protecting traditional cultural food practices: Trends in diet quality and intake of ultra-processed foods by Indigenous status and race/ethnicity among a nationally representative sample of adults in Canada. *SSM Popul Health*. 2023;24:101496.

227. Pozveh SH, Aktary ML, Polsky JY, Moubarac JC, Vanderlee L, Olstad DL. Socioeconomic Inequalities in Intakes of Ultraprocessed and Minimally Processed Foods in Nationally Representative Samples of Adults in Canada: An Analysis of Trends between 2004 and 2015. *J Nutr*. 2024.

228. Afshin A, Sur PJ, Fay KA, et al. Health effects of dietary risks in 195 countries, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017. *The Lancet*. 2019;393(10184):1958-1972.

229. Fanzo J, Davis C. Can Diets Be Healthy, Sustainable, and Equitable? *Current Obesity Reports*. 2019;8(4):495-503.

230. Pan-Canadian Health Inequalities Data Tool. A joint initiative of the Public Health Agency of Canada, the Pan-Canadian Public Health Network, Statistics Canada and the Canadian Institute for Health Information. **https://health-infobase.canada.ca/health-inequalities/Indicat. Accessed April 3, 2024**.

231. Public Health Agency of Canada. Canadian Chronic Disease Indicators (CCDI) Data Tool. 2021; **https://health-infobase.canada.ca/ccdi/**. Accessed March 26, 2024.

232. Olstad DL, Teychenne M, Minaker LM, et al. Can policy ameliorate socioeconomic inequities in obesity and obesity-related behaviours? A systematic review of the impact of universal policies on adults and children. *Obesity Reviews*. 2016;17(12):1198-1217.

233. Mayén AL, de Mestral C, Zamora G, et al. Interventions promoting healthy eating as a tool for reducing social inequalities in diet in low- and middle-income countries: a systematic review. *Int J Equity Health*. 2016;15(1):205.

234. Nutrition Surveillance Data Tool, 2021 Edition. A joint initiative of Health Canada and the Public Health Agency of Canada. **https://health-infobase.canada.ca/nutrition/usual-intakes**/.

235. Ahmed M, Praneet Ng A, L'Abbe MR. Nutrient intakes of Canadian adults: results from the Canadian Community Health Survey (CCHS)-2015 Public Use Microdata File. *Am J Clin Nutr*. 2021;114(3):1131-1140.

236. Rana H, Mallet MC, Gonzalez A, Verreault MF, St-Pierre S. Free Sugars Consumption in Canada. *Nutrients*. 2021;13(5).

237. World Health Organization. *Guideline: sugars intake for adults and children*. Geneva (Switzerland): World Health Organization;2015.

238. Statistics Canada. Detailed food spending, Canada, regions and provinces. 2023; https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1110012501&pickMembers%5B0%5D=1.1&cubeTimeFrame.startYear=2015&cubeTimeFrame.endYear=2021&referencePeriods=20150101%2C20210101. Accessed September 26, 2024.

239. Statistics Canada. Table 13-10-0373-01 Overweight and obesity based on measured body mass index, by age group and sex. https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1310037301. Accessed March 26, 2024.

240. Public Health Agency of Canada. Canadian Chronic Disease Surveillance System (CCDSS) [Data Tool]. 2024; https://health-infobase.canada.ca/ccdss/data-tool/. Accessed March 26, 2024.

241. Statistics Canada. Health Fact Sheets - Cholesterol levels of adults, 2016-2019. 2021; https://www150.statcan.gc.ca/n1/pub/82-625-x/2021001/article/00003-eng.htm. Accessed March 27, 2024.

242. Centre for Surveillance and Applied Research- Public Health Agency of Canada. Canadian Cancer Data Tool (CCDT), 2021 Edition. Public Health Infobase. Ottawa (ON): Public Health Agency of Canada. 2021; https://health-infobase.canada.ca/ccdt/.

243. Ferlay J EM, Lam F, Laversanne M, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F. Global Cancer Observatory: Cancer Today. 2024; https://gco.iarc.who.int/media/globocan/factsheets/populations/124-canada-fact-sheet.pdf. Accessed April 5, 2024.

244. Centres for Disease Control. National Center for Health statistics. 2022; https://www.cdc.gov/nchs/nhanes/index.htm. Accessed August 9, 2024.

245. Colchero MA, Popkin BM, Rivera JA, Ng SW. Beverage purchases from stores in Mexico under the excise tax on sugar sweetened beverages: observational study. *BMJ*. 2016;352:h6704.

246. Government of Ireland. A healthy weight for Ireland: Obesity Policy and Action Plan 2016 - 2025. 2020; https://www.gov.ie/en/publication/c778a9-a-healthy-weight-for-ireland-obesity-policy-and-action-plan-2016-202/. Accessed August 9, 2024.

247. Peters SAE, Dunford E, Ware LJ, et al. The Sodium Content of Processed Foods in South Africa during the Introduction of Mandatory Sodium Limits. *Nutrients*. 2017;9(4).

248. Finnish National Board of Education. Basic Education Act. 1998.

249. World Population Review. Countries with Universal Basic Income 2024. 2024; https://worldpopulationreview.com/country-rankings/countries-with-universal-basic-income. Accessed August 9, 2024.

250. Government of the United Kingdom DoHaSC, Department for Digital Culture, Media & Sport,,. Total restriction of online advertising for products high in fat, sugar and salt (HFSS). 2021; https://www.gov.uk/government/consultations/total-restriction-of-online-advertising-for-products-high-in-fat-sugar-and-salt-hfss. Accessed May 29, 2024.

251. Government of the United Kingdom - Department of Health and Social Care. Restricting promotions of products high in fat, sugar or salt by location and by volume price. 2023; https://www.gov.uk/government/publications/restricting-promotions-of-products-high-in-fat-sugar-or-salt-by-location-and-by-volume-price#:~:text=Restriction%20of%20HFSS%20products%20by,promotions%20on%20packaging%20until%202024. Accessed August 9, 2024.

252. Ruffini O, Relf C, Mann D, et al. Development of the Local Food Systems Policy Index (Local Food-EPI+) tool and assessment process to benchmark the implementation of local government policies for creating healthy, equitable and environmentally sustainable food systems. *Public Health Nutrition*. 2024;27(1):e191.

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An in-depth look at Canada's food environments

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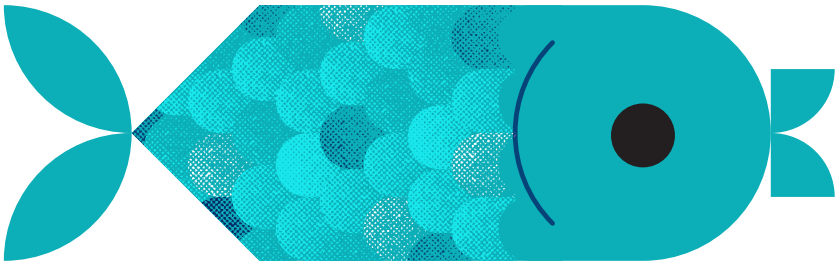

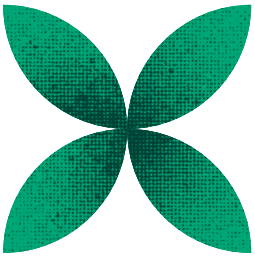

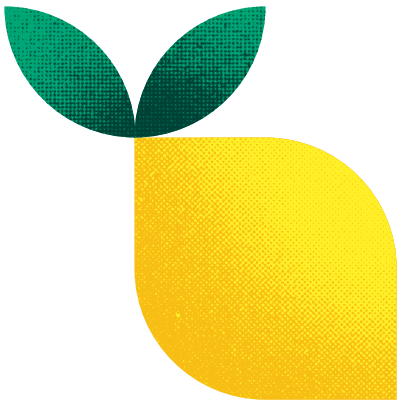

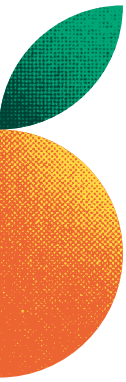

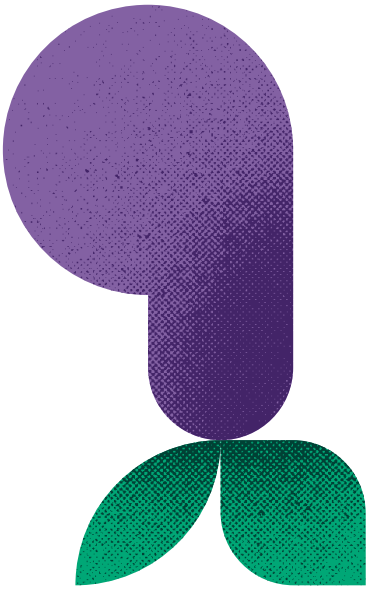

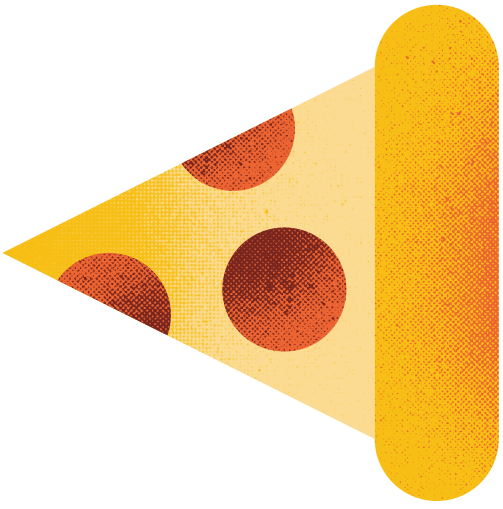

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