

Marketing to children in Canada:

The persuasive power
of child-targeted food
packaging

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Acknowledgments

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Executive summary

Creating a healthy food environment for our children matters. Food marketing—especially for unhealthy food—is a huge part of that food environment, and it has been shown to impact children's food preferences, tastes and consumption habits. Given the harmful effects of unhealthy food marketing on children's health, the World Health Organization (WHO) has recommended that countries develop policies to restrict such marketing. Policies need to limit the power of food marketing (i.e., the techniques/creative strategies used to target and persuade) and its exposure (i.e., reach and frequency).

Product packaging is a powerful form of food marketing to children and a top source of children's exposure in their day-to-day lives. The persuasive appeals found on child-targeted food packaging—especially cartoon appeals (such as cartoon brand mascots and characters from children's entertainment media)—prompt children to pester their parents for such products and influence their food preferences. Previous research in Canada has found that many of the foods specifically packaged to appeal to children are high in sugar, fat and/or sodium, but new data is needed to capture the current state of child-targeted food packaging in stores across the country. Beyond this, even though cartoon licensed media characters (LMC) such as Minions, Super Mario Bros. or Paw Patrol appear on child-targeted packaging, we know very little about the nature or extent of such marketing.

This research posed two questions, aiming to provide an up-to-date snapshot of packaged foods with child-targeted cartoon appeals in various retail outlets across the country and to better understand the nature and nutritional quality of those marketed foods.

1. What is the nature and nutritional quality of child-targeted packaged food with cartoon appeals in Canada? (Study 1)
2. What LMC are found on food and beverage packaging in retail environments over 12 months, and based on Health Canada's proposed model for advertising restrictions, would these products be permitted to be advertised to children? (Study 2)

Methods

For Study 1: In-store audits were conducted in four cities across Canada (Calgary, Toronto, Halifax, and Quebec). A total of 16 stores were visited (two mainstream supermarkets, a discount store and an international/ethnic supermarket in each location).

All child-targeted food products were photographed, reviewed and then coded for their front-of-package marketing techniques, nutrition facts and ingredients list. Child-targeted products with cartoon appeals (including generic cartoons, LMC and cartoon brand mascots) were isolated for further analysis and also evaluated using Health Canada's proposed nutrient criteria for determining whether it is suitable for being advertised to kids.

For Study 2: In-store audits were conducted in six retail stores in Calgary, Alberta (including mainstream supermarkets, discount stores, an international/ethnic supermarket and a drug store). Stores were visited every month for a full year. All foods and beverages with cartoon LMC were photographed, with marketing techniques, nutrition facts, and ingredients captured and coded as per Study 1. Products were then evaluated using Health Canada's proposed nutrient criteria.

Results

1. Cartoon appeals on child-targeted packaged food in Canada was pervasive.

Across the 16-store audit, 2,737 food and beverage products—and 1,157 unique products—were captured. The vast majority (80%) of these products were dry goods (i.e., non-perishable, shelf-stable foods), with confectionery products (candy/chocolate), cereal, cookies and fruit snacks topping the list by frequency.

2. Across both studies, over 92% of the unique child-targeted foods exceed thresholds set out by Health Canada’s proposed nutrient criteria for advertising to children.

Sugar was the most commonly exceeded threshold. In Study 1, 78% of the products exceeded thresholds for sugar, while 41% of products exceeded thresholds for sodium and 29% exceeded thresholds for saturated fat. Similar results were found in Study 2.

3. Children could encounter up to 54 products packaged with licensed media characters in just one store visit, based on the largest store surveyed.

Minions, Paw Patrol and Mickey Mouse & Friends promoted the greatest number of packaged products across a range of food categories. Minions characters, for instance, were found on the packaging of 34 different foods and beverages, and used to promote everything from cupcakes, cookies, chocolate and lunch kits, to squeezable fruit snacks, drinkable yogurt, seaweed snacks, and hamburger buns. Over the year-long audit, 299 unique products featured LMC, which were captured 1530 times across all stores. These LMC typically occupied just under 50% of the front-of-package space, with some LMC filling the entire real estate of the package.

Conclusion & Policy Recommendations

This report contributes additional evidence of how ever-present marketing to kids is in Canada and reinforces the need to enact policies to restrict this harmful practice.

In Canada, there have been multiple commitments by the federal government to restrict the marketing of unhealthy food to children. To this end, Health Canada has developed a policy proposal, which includes proposed nutrient criteria for advertising restrictions on foods that exceed predefined thresholds for sodium, sugars, and saturated fat to children under 13.

Although packaging restrictions are not included in the policy proposal, nearly all the products assessed in both studies exceed these thresholds. This includes foods parents may expect to be unhealthy, such as candy, but also those they might not expect, such as fruit snacks, granola bars or yogurt, or products featuring various health and nutrition-related claims.

This research adds further evidence that restrictions on food advertising to children should be implemented by the federal government without delay. It also underscores the critical need for ongoing monitoring of food packaging so that future measures may be taken to protect our children from its persuasive appeals.

Introduction

Marketing foods and beverages (hereafter referred to as ‘foods’) to children is a billion-dollar industry promoting unhealthy foods across an ever-expanding range of media and platforms.¹ Over the past two decades, a growing evidence base has documented the adverse effects of food marketing on children’s health, including a detrimental impact on children’s food preferences, tastes, and consumption.²⁻⁷ In response, the World Health Organization (WHO) has called for mandatory government-led regulatory action to curb the impact of unhealthy food marketing to children to mitigate marketing exposure (i.e., reach and frequency) and power (i.e., specific techniques and creative strategies used to target and persuade).^{2,5,7} Government legislation and/or regulations are essential to ensure children are protected from the adverse effects of marketing, given the largely ineffective nature of industry self-regulation.⁸⁻¹⁰

Policy context in Canada

Over the past decade, the Government of Canada has made multiple commitments to implement measures aimed at restricting the marketing of unhealthy foods to children. These commitments have been reflected in federal election platforms, a federal budget, and the Minister of Health’s Mandate Letters, signalling ongoing recognition of the importance of protecting children from unhealthy food and beverage marketing.¹¹⁻¹⁸ In 2016, Bill S-228, the Child Health Protection Act, was introduced to prohibit the marketing of unhealthy food and beverages to children under the age of 13. Although the bill passed in the House of Commons, it ultimately died on the order paper in the Senate in 2019.¹⁹ Most recently, Bill C-252, a private member’s bill seeking to amend the Food and Drugs Act to prohibit such marketing, reached its third reading in the Senate but died waiting on the Senate Order Paper, when an election was called in March 2025.²⁰ While no mandatory national measures are currently in place, the repeated inclusion of this issue on the federal agenda highlights sustained policy interest in addressing the marketing of unhealthy foods to children.¹¹⁻¹⁸

During Bill C-252’s progression through the legislative process, and within the scope of Health Canada’s Forward Regulatory Plan for 2022-2024, Health Canada has been developing a framework to support the implementation of mandated measures. This includes a policy proposal, which includes proposed nutrient criteria for advertising restrictions on foods that exceed predefined thresholds for sodium, sugars, and saturated fat to children under 13.²¹ After engaging a broad range of stakeholders to gather insights and feedback on the matter,^{22,23} Health Canada proposed to initially restrict unhealthy food marketing on television and digital media and to monitor other media and settings, such as product packaging and retail environments, to inform potential future regulatory changes.²⁴

Marketing to children on food packaging

Although not covered in Health Canada’s initial proposal, food packaging is a powerful means of marketing to children that drives decision-making at the point-of-sale and influences children’s food preferences.²⁵ Foods with on-package marketing to children are also typically unhealthy.²⁶⁻³⁶ In Canada, a striking 88% of child-targeted packaged foods were found to be of poor nutritional quality, a figure that did not improve between 2009 and 2017.²⁸

While research has examined certain marketing to kids strategies in retail stores across Canada*, the focus pivoted on “junk food power walls”, child-appealing island displays, and branded fridges³⁷—a detailed look at child-targeted packaging was not the objective. To date, only a handful of studies have explored the full range of child-appealing persuasive techniques found on product packaging in Canada.^{28,30,38,39} Such research, however, is based on products collected eight (or more) years ago,^{28,30,38,39} and limited in focus to one city and to major supermarket chains. New data is needed to capture the current state of child-targeted food packaging in retail environments across the country.

* Here, we are specifically referring to studies that examine stores across the country, rather than in one city.

Cartoon appeals on food packaging

In particular, what is required is an updated snapshot of the cartoon appeals on packaged products targeting our children. Cartoons, including brand mascots/spokes characters and licensed media characters (LMC), are among the most frequently used creative strategies to appeal to children.⁴⁰ They attract children's attention, influence food preferences, purchase intent and pester power.⁴¹⁻⁴³ Cartoon appeals also represent one of the most clear-cut indicators when it comes to identifying child-targeted packaging.[†]

LMC on food packaging are an intriguing element of these child-targeted appeals. Characters from entertainment media popular with children—including movies, television shows, and video games—are often seen on food packaging.³⁹ Marketing this way enhances product appeal by capitalizing on the popularity of characters that already resonate with children. However, the degree to which LMC are used on product packaging in Canada as a marketing tool has not been thoroughly investigated.

† Products adorned with cartoon Squishmallows, Minions, Lucky the Leprechaun or Cheesy Cheestrings are indisputably child targeted. Other indicators used in the assessment of child-targeted foods (such as movement or novel flavour) are not as clear cut. This said, not all cartoon iconography is child-targeted. This study focuses on child-targeted packaging with cartoons.

Objectives

This report fills important gaps in our understanding of how food packaging in Canadian retail stores is used to market to children.

Specifically, the report provides:

1. A current overview of the nutritional quality and types of foods that use cartoon appeals on packaging to market to children (including cartoon brand mascots, characters from children's entertainment media, or the words *fun* or *kid*).
2. An exploration of the types, nutritional quality, and availability of foods marketed to children using LMC on their packaging over time.

The report draws on two related studies to address these objectives.

Study 1 analyzes food products with cartoons (or the words *fun* or *kid*) on their packages found in 16 retail stores across four Canadian cities, offering an up-to-date snapshot of the extent of this marketing. The nature of these foods is examined, and their nutritional quality is assessed using Health Canada's proposed nutrient profile criteria for advertising restrictions.

Study 2 investigates the mediatization of children's foods by tracking the presence of LMC on food packaging in various retail stores for 12 months. Similar to Study 1, it assesses the nature of these foods and evaluates their nutritional quality using the proposed nutrient profile criteria for advertising restrictions.

The methods and findings of each study are presented sequentially, followed by a discussion that highlights key takeaways and their implications within the broader research landscape.

Study 1. What is the nature and nutritional quality of child-targeted packaged food with cartoon appeals (including cartoons, LMC and cartoon brand mascots) in Canada?

1.1 Methods

Store selection

With 27,960 food stores across the country,⁴⁴ it was beyond the scope of this study to capture all the available child-targeted packaged foods with cartoon appeals. Documenting all exposure was not the goal. Instead, the intent was to provide a snapshot of the products vying for children's attention and to better understand the extent and persuasive power of such marketing strategies in the surveyed stores. To do so, we conducted a total of 16 in-store audits across four cities in Canada. Stores were visited in Alberta (Calgary), Ontario (Toronto), Nova Scotia (Halifax), and Quebec (Montreal), allowing for representation from Western, Central, and Eastern Canada, as well as the unique regulatory environment of Quebec. We audited stores representing the two largest grocery distributors in each city, along with one discount store and one catering to international/ethnic markets (see **Appendix A** for a list of the store types, names, and locations). The purposeful selection of these store types allows us to capture marketing to children in the "mainstream" grocery environment, which includes the two largest players in the Canadian food retail market (in terms of revenue and number of stores), discount stores, which target lower-income and price-conscious consumers (often with different product offerings), and international/ethnic stores, which offer child-directed marketing unique to international audiences.

Data collection and processing

For each store, trained researchers followed an established protocol for identifying child-targeted food products,^{28,45} photographing the front of the package, the nutrition facts table, and the ingredients list. Each store was visited multiple times during the data collection, with systematic progression through each aisle, to ensure all products were captured (except baby/toddler foods, energy drinks, and sprinkles (for baking)). Since the project is interested in the extent of child-targeted packaging (what people see in the stores, as well as the unique product offerings available), food products sold in multiple sizes were also captured. All photographs were uploaded into a shared Dropbox folder and jointly reviewed by the research team to confirm that the packaging met the predefined criteria for being child-targeted. Any packages that raised questions with respect to the criteria were discussed among the researchers, and irrelevant product photos were removed.

Product photos were then uploaded and stored in *TrackPack*, an app designed to facilitate coding. *TrackPack* uses built-in optical character recognition (OCR) to automatically analyze, digitize, and store each product's nutrition facts and ingredient lists. *TrackPack* also allows coders to input data on food category, brand, product name, presence of health and nutrition-related claims (e.g., "source of fibre," "no sugar added," "gluten-free"), and specific child-targeted marketing techniques for each product. In addition, the app measures the percentage of the package taken up by a cartoon, brand mascot or media character so that the prominence of these cartoon appeals can be better understood.

Before coding the entire dataset, a random 5% sample was independently coded by the research team, yielding an inter-rater reliability of over 94%. Coding discrepancies were resolved through discussion, resulting in consensus on handling coding uncertainties. A single researcher coded the remainder of the data set, flagging any products with ambiguous marketing techniques for review. These were discussed by the research team and resolved through consensus. Once all the products were coded, the entire dataset was reviewed a second time for coding accuracy; another random 5% of the sample was also checked by the research team.

Statistical analysis plan

Analysis was limited to products with cartoon appeals, including brand mascots and LMC, as well as the words *fun* or *kid* (terms included because they explicitly work to identify children as the target audience). Frequencies and proportions were used to describe products by food category and subcategory, type of cartoon, and presence of nutrition and health claims. The frequency of these products was compared across store types (mainstream, international, and discount) and cities (Calgary, Halifax, Montreal, and Toronto) using Chi-square and Fisher's exact tests, as appropriate.

The nutritional quality of each product was assessed using Health Canada's proposed nutrient profiling model for advertising restrictions.⁴⁶ This model focuses on three nutrients of concern (i.e., sodium, sugars, saturated fats) known to compromise a healthy diet. Thresholds correspond to approximately 6% of the daily value for sodium, 5% for sugars, and 10% for saturated fat.* Products with added sodium, free sugars, or fats† exceeding the thresholds would not be permitted to be advertised to children.²⁴ Products without these added nutrients, as well as products containing them at levels below the relevant thresholds, would be permitted to be advertised to children.

Nutritional quality was summarized as the proportion of products with added sodium, free sugars or fat that exceeded (any or all) these three thresholds. The proportion of unique products in each food category and subcategory exceeding the thresholds for each nutrient was also assessed.

* Threshold calculations use the food's reference amount and serving of stated size.

† Note that the thresholds only apply to foods that contain added sodium, added fat and/or free sugars, and the threshold for fat specifically pertains to saturated fat.

1.2 Results

Presence of cartoon appeals on food packages

Across the 16 stores, 2,737 products had cartoon appeals (including generic cartoons, LMC, or brand mascots) and/or used the words *fun* or *kid* on the package. This figure includes duplicate (identical) products available at different stores and/or products in multiple sizes. With duplicates removed, there were 1,157 unique products targeting children.*

Cartoon appeals by food category

Cartoons† on child-targeted food packaging were found in every food category. They were particularly dominant in dry goods (i.e., non-perishable, shelf-stable foods) (**Table 1**). Of all packages with cartoons, 81.5% (79.5% of unique products) were dry goods, with confectionery products (candy/chocolate), cereal, cookies, and fruit snacks topping the list by frequency. With 920 distinct products in dry goods, however, these child-enticing appeals could be found on a wide range of products, from cream-filled snack cakes, chocolate milk syrup and microwave popcorn to peanut butter, instant noodles, and seaweed snacks.

The dairy category contained 9.6% of the total products with cartoons (7.6% of unique products). Yogurt-based drinks, cheese, and flavoured yogurts had the most products with cartoon appeals, representing 90.5% of the foods captured in this category (84.1% of unique products). Examples include yogurt drinks adorned with Paw Patrol, Spiderman, and Minions, and smiling strawberry and banana cartoons that advertise the “real fruit” in the beverage. By comparison, refrigerated and frozen foods were primarily sweet treats (e.g., popsicles, ice cream, and refrigerated cookies) and ultra-processed lunch kits (e.g., Lunchmate with sausage, processed cheese, wheat crackers, and a Kit Kat bar). Frozen breakfast foods, such as waffles (packaged with cartoon emojis) and French toaster sticks (decorated with cartoon eyes on a picture of the food), also comprised roughly 22% of the products in this subcategory (and 14.3% of unique products) (**Table 1**). Merely 1% of the products with cartoon appeals were produce, such as bagged apples promoted as “kid size fruit”, “cuties” mini oranges, kiwi (promoted as “the super fun superfood!”) and baby tomatoes. All these offerings featured cartoon images of the promoted fruit or vegetable.

* Products with different flavour variations are considered unique (e.g., Bear Paws cookies in brownie, oatmeal, chocolate chip, banana bread, oatmeal, and carrot cake, and others).

† For ease of reading, unless otherwise noted, “cartoons” will be used as a comprehensive term to describe all the marketing techniques of interest for this study (i.e., cartoon brand mascots, LMC, cartoon iconography and the words fun or kid).

Table 1. Food categories containing products with on-package cartoons*

Food category	All products (n=2,737)		Unique products† (n=1,157)	
	n	%	n	%
Dry goods	2,230	81.5	920	79.5
Confectionery (candy/chocolate)	385	17.3	218	23.7
Cereal	350	15.7	89	9.7
Cookies/biscuits	298	13.4	117	12.7
Fruit snacks/applesauce	174	7.8	60	6.5
Crackers	155	7	39	4.2
Pastas (boxed/canned) and soups	151	6.8	66	7.2
Chips, cheese puffs, pretzels, popcorn, etc.	150	6.7	82	8.9
Granola bars/snack bars/cereal bars	125	5.6	45	4.9
Drink syrups/crystals/powders	113	5.1	22	2.4
Drinks/drink boxes	109	4.9	69	7.5
Other‡	220	9.9	135	14.7
Dairy	262	9.6	88	7.6
Milk/yogurt-based drink	111	42.4	30	34.1
Cheese	88	33.6	28	31.8
Yogurt	38	14.5	16	18.2
Milk	24	9.2	13	14.8
Other‡	1	0.4	1	1.1
Refrigerated and frozen food (excluding meat)	219	8	126	10.9
Frozen ices/popsicles	50	22.8	31	24.6
Packaged lunch kits	49	22.4	18	14.3
Frozen breakfast food	48	21.9	18	14.3
Ice cream	25	11.4	23	18.3
Refrigerated cookies	15	6.8	14	11.1
Pizza pops, etc.	15	6.8	7	5.6
Other‡	10	4.6	9	7.1
Frozen dinners/meals	7	3.2	6	4.8
Fresh produce	17	0.6	14	1.2
Meat/seafood	6	0.2	6	0.5
Bakery	3	0.1	3	0.3

n: frequency; % proportion

* This includes child-targeted packages with cartoon brand mascots, LMC or generic cartoons or the words *kid* or *fun*.

† Unique products exclude identical products available at different stores or multiple package sizes of the same item.

‡ Other includes all remaining subcategories.

Cartoon appeals by city and store type

When comparing cities, there were few differences in the frequency of products with cartoons in each main food category, including a lower frequency of refrigerated and frozen foods in Montreal and a higher frequency of produce in Toronto ($p < 0.001$; data not shown). Some differences were observed across cities by product subcategory. For instance, confectionery with cartoons appeared

most frequently in Montreal (20% of products in Montreal) and least frequently in Calgary (9.1% of products in Calgary) ($p < 0.001$). In contrast, salty snacks (chips, cheese puffs, etc.) with cartoon appeals were more frequently captured in Calgary and Toronto (8.2% and 8.5% of products, respectively) compared to Montreal (3.4%) ($p < 0.001$). Note, however, that these differences in both food category and subcategory may simply reflect differences in the specific stores visited.

Only one difference was observed in the frequency of products featuring cartoons across the main food categories when comparing different store types. Discount stores had fewer products with cartoons in the refrigerated and frozen food and dairy categories ($p < 0.001$; data not shown), an expected finding because the specific discount stores visited only stocked dry goods.

Examining the product subcategories by store type, however, provides helpful insight into the types of foods most vying for children's (and parental) attention depending on where they shop. **Table 2** shows that more than half of the products with cartoons from discount stores were confectionery (candy/chocolate) compared to roughly 15% or less from mainstream and international stores ($p < 0.001$). By contrast, mainstream stores more frequently carried cereals with cartoons ($p < 0.001$) and international stores more frequently carried cookies/biscuits with cartoons ($p < 0.001$) compared to the other store types.

Table 2. Top 10 subcategories containing products with on-package cartoons* by store type

Food subcategory	Mainstream (n=1,973)‡		International (n=537)‡		Discount (n=227)‡		p-value†
	n	%	n	%	n	%	
Confectionery (candy/chocolate)	179	9.1	81	15.1	125	55.1	<0.001
Cereal	295	15	29	5.4	26	11.5	<0.001
Cookies/biscuits	187	9.5	95	17.7	16	7	<0.001
Fruit snacks/applesauce	163	8.3	10	1.9	1	0.4	<0.001
Crackers	133	6.7	19	3.5	3	1.3	<0.001
Pastas (boxed/canned) and soups	112	5.7	37	6.9	2	0.9	0.01
Chips, cheese puffs, pretzels, etc.	71	3.6	58	10.8	21	9.3	<0.001
Granola bars/snack bars/cereal bars	114	5.8	7	1.3	4	1.8	<0.001
Drink syrups/crystals/powders	93	4.7	17	3.2	3	1.3	.03
Milk/yogurt-based drink	81	4.1	30	5.6	0	0	<0.001

n: frequency; % proportion

Includes duplicate products from across stores and multiple package sizes of the same items (n=2,737).

* This includes child-targeted packages with cartoon brand mascots, LMC or generic cartoons or the words *kid* or *fun*.

† P-values determined with chi-square or Fisher's exact tests.

‡ Only the top 10 subcategories are displayed; frequency counts may not sum to the total number of products.

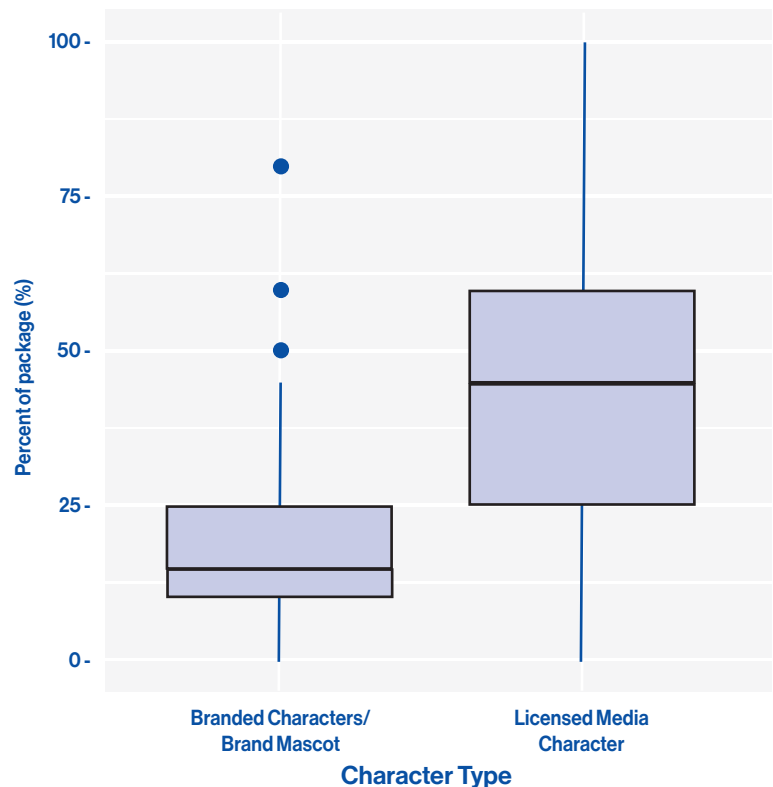
Child-targeted marketing on food packages by type of cartoon

Most cartoon imagery found on child-targeted packaging was generic, offering a sweeping range of anthropomorphized animals, plants, happy faces, magical creatures, monsters, and smiling food (see [Appendix C](#) for examples). Cartoon brand mascots appeared on nearly half (48%) of all the products with cartoon appeals and on approximately 4 in 10 unique products (38.7%). Given the pervasiveness of dry goods products overall in the child-targeted foods collected, it is perhaps not surprising that 88.3% of the brand mascots captured were in the dry goods (and 82.2% of unique products) (data not shown). Brand mascots included long-standing cartoon spokes characters associated with children's cereals, such as Tony the Tiger (debuting on Kellogg's Sugar Frosted Flakes of Corn in 1952), Lucky the Leprechaun (created for Lucky Charms in 1963) and Toucan Sam (created for Froot Loops in 1963), alongside many others. Examples of mascots and their associated products included Crazy Squares mascots (Cinnamon Toast Crunch), BuzzBee (Honey Nut Cheerios), Chester Cheetah (Cheetos), Pawley (Bears Paws), Mr. Chubby (soft drink), Finn, the smiling goldfish (Goldfish), Cheesy (Cheestrings) and Red, Yellow, Orange and Green (M&Ms).

By comparison, LMC were featured on roughly 1 in 10 products. Although LMC were used less frequently than other cartoon appeals, they featured more prominently. While most brand mascots occupied 10–25% of the front-of-package space, the prominence of LMC was more variable, with clustering found at just under 50% of the front-of-package space. For a small percentage of products (e.g., Minecraft Creeper Crunch cereal), the entire front-of-package space was a LMC.

Figure 1 shows the percentage of front-of-package space occupied by cartoon brand mascots and LMC for the unique products collected.

Figure 1. Prominence of cartoon brand mascots and licensed media characters on food packaging



Health and nutrition related claims

Although the products were selected for their child-targeted cartoon appeals, adult-oriented appeals to health featured prominently. Roughly 75% (n=2,056) of all products featured such appeals, including 62.0% of unique products (n=717). The most popular claims pertained to what the product did not contain, such as “no artificial flavours” or “no artificial colours” found on nearly one-third of all products (1 in 6 unique products). “Peanut-free,” “gluten-free,” and “non-GMO verified” were also popular claims (**Table 3**). These “free from” claims were joined by other appeals related to the naturalness of the product, with “naturally flavoured,” “made with real... (fruit, cocoa, honey, peanut butter, cheese, etc.),” and “organic” claims featuring in the top 10 most frequently used. Of the unique products that featured health or nutrition-related claims, two claims per package were the most common. Twenty percent (n=233) of the unique products had two claims on the packaging, 15.4% (n=178) had one claim, and 14.8% (n=171) had three claims. Approximately 5% (n=56) of the unique products had 5-8 health and/or nutrition-related claims on their packaging.

Several products also offered a range of marketing claims designed to highlight the desirability of the product from a compositional standpoint (such as “made better” or “premium quality”).

Table 3. Ten most common health and nutrition-related claims on foods with on-package cartoons

All products (n=2,737) [†]			Unique products (n=1,157) [†]		
Health and nutrition-related claim	n	%	Health and nutrition-related claim	n	%
No artificial flavours or artificial colours	744	27.2	No artificial flavours or artificial colours	190	16.4
Made with real...	377	13.8	Peanut free	119	10.3
Peanut free	321	11.7	Naturally flavoured	112	9.7
Naturally flavoured	320	11.7	Gluten-free	99	8.6
Non-GMO verified	246	9.0	Non-GMO verified	98	8.5
Whole grain	236	8.6	Made with real...	97	8.4
Gluten-free	232	8.5	Whole grain	60	5.2
No artificial sweeteners	156	5.7	Organic	53	4.6
No sugar added	155	5.7	No sugar added	47	4.1
Organic	143	5.2	Source of fibre	33	2.9

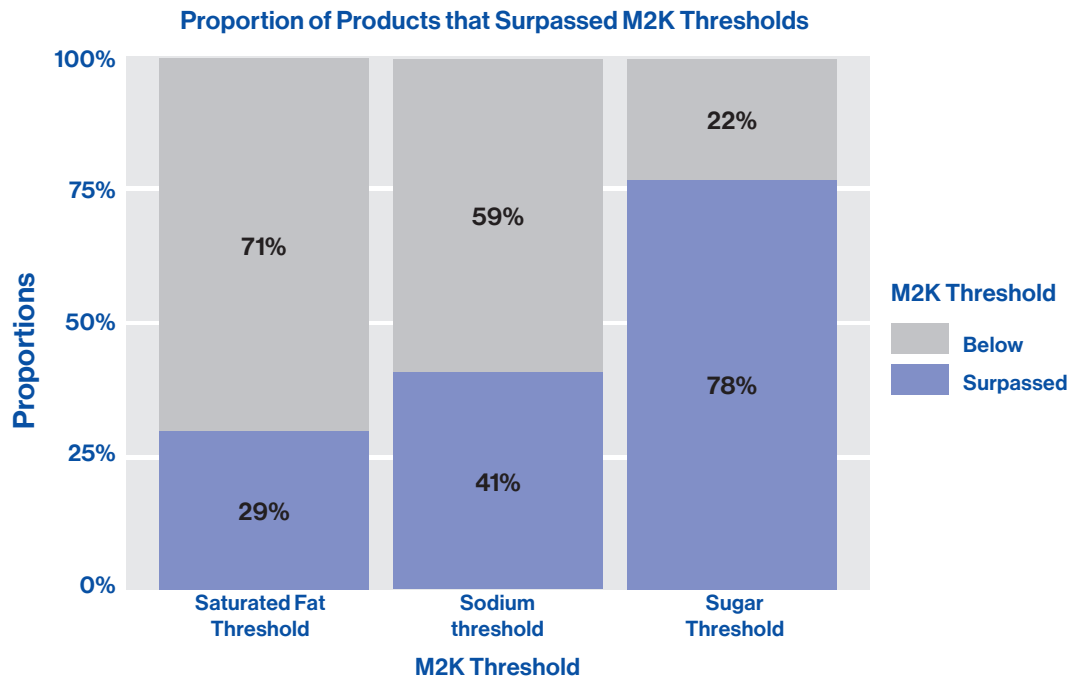
n: frequency; % proportion

[†]Only the top 10 subcategories are displayed; frequency counts may not sum to the total number of products.

Nutritional quality of foods with cartoon appeals

Since duplicate products (in different sizes and across different stores) have identical nutrient profiles, this nutritional assessment focused on the unique products captured. After excluding products with different units for serving size and reference amount (as per Health Canada’s proposed policy^{46, 47}), 1,098 unique products with on-package cartoons remained for nutritional assessment. **Figure 2** depicts the percentage of products that exceed specific nutrient thresholds. The most commonly exceeded threshold was for sugars (exceeded by 78% of products), followed by sodium (exceeded by 41% of products), and saturated fat (exceeded by 29% of products). Of all the unique products assessed, 94.4% (n=1036) exceed at least one threshold set by Health Canada’s proposed nutrient profile model for advertising restrictions.⁴⁶

Figure 2. Percentage of products that exceed* specific nutrient thresholds



*Products without added fats, free sugars, or added sodium are automatically considered to be below the respective thresholds for those nutrients, regardless of their natural content levels.

Table 4 provides a nutrient threshold analysis by product subcategory. It reveals that for several subcategories, over 90% of products exceeded the threshold for sugar (e.g., confectionary, cookies, cereals, drinks, granola bars, toaster pastries/snack cakes, puddings, yogurts, yogurt-based drinks, frozen ice/popsicles, packaged lunch kits, refrigerated cookies), saturated fat (e.g., packaged lunch, pizza pops/ corn dogs, etc., frozen dinners/meals), and sodium (e.g., crackers, pastas (boxed/ canned) and soups, cheese, packaged lunch, pizza pops/ corn dogs, etc., frozen dinners/meals).

Table 4. Proportion of products with on-package cartoons* exceeding nutrient thresholds by food subcategory (n=1098)

Food Category	% products exceeding nutrient threshold			
	n	Sugar	Saturated fat	Sodium
Dry goods				
Confectionery (candy/chocolate)	218	94.0	24.3	0.0
Cookies/biscuits	117	94.9	58.1	42.7
Cereal	89	92.1	0.0	80.9
Chips, cheese puffs, pretzels, popcorn (includes coated popcorn), grain and pulse-based snacks, pita chips and fruit chips	82	23.2	74.4	87.8
Drinks/drink boxes	66	93.9	7.6	4.5
Fruit snacks/applesauce	59	83.1	3.4	1.7
Granola bars/snack bars/cereal bars	45	100.0	22.2	35.6
Crackers	39	35.9	12.8	97.4
Other	34	73.5	32.4	58.8
Peanut butter, jam or spreads	32	78.1	6.2	21.9
Pastas (boxed/canned) and soups	30	36.7	40.0	96.7
Muffins/doughnuts/toaster pastries/snack cakes (with or without icing)	22	100.0	81.8	77.3
Drink syrups/crystals/powders	16	68.8	0.0	6.2
Dressing/sauces/condiments/toppings	13	69.2	23.1	46.2
Pancake and batter mixes	7	100.0	0.0	71.4
Puddings/gelatin dessert	5	100.0	0.0	40.0
Dairy				
Milk/yogurt-based drink	30	93.3	6.7	10.0
Cheese	28	0.0	7.1	100.0
Yogurt	13	100.0	0.0	0.0
Milk	12	83.3	25.0	50.0
Other	1	0.0	0.0	0.0
Refrigerated and frozen food (excluding meat)				
Frozen ices/popsicles	28	96.4	25.0	3.6
Packaged lunch	18	94.4	100.0	100.0
Frozen breakfast food	18	55.6	50.0	88.9
Ice cream	17	100.0	17.6	0.0
Refrigerated cookies	14	100.0	35.7	64.3
Other	9	44.4	11.1	44.4
Pizza pops/corn dogs, etc.	7	42.9	100.0	100.0
Frozen dinners/meals	6	66.7	100.0	100.0
Fresh produce				
Fruit/Vegetables	14	0.0	0.0	44.4+
Meat/seafood				
	6	33.3	33.3	50.0
Bakery				
	3	33.3	0.0	66.7

n: frequency, % proportion

* This includes child-targeted packages with cartoon brand mascots, LMC or generic cartoons or the words *kid* or *fun*.

+ These were vegetables packaged with seasoning packets; the seasoning exceeded the thresholds for sodium.

Study 2. What LMC are found on food and beverage packaging in retail environments, over 12 months? Given Health Canada's proposed nutrient profile model for advertising restrictions, would these products be permitted to be advertised to children?

2.1 Methods

Store selection and data collection

To identify the presence of cartoon LMC on food packages over time, monthly in-store audits of six grocery retailers were conducted in Calgary, Alberta, from November 2023 to October 2024. Stores represented major grocery distributors in Canada (The Real Canadian Superstore, Safeway, Walmart), the largest ethnic supermarket in the city (T&T), a discount grocery retailer (Dollarama), and a drug store (Shoppers Drug Mart*). For each audit, all foods and beverages with cartoon LMC were photographed, including the front of the package, the nutrition facts table, and the ingredients list. Baby food/toddler products were excluded from the data collection. All photographs of products with LMC were uploaded to *TrackPack* to facilitate coding (data collection and processing steps are detailed in Study 1). Brand, name, food category, and LMC present were recorded for each product in *TrackPack*, along with the ingredients list and nutrition facts.

Statistical analysis plan

The statistical analysis plan is similar to that described in Study 1. Frequencies and/or proportions were used to summarize the presence and nature of products with on-package LMC, including monthly availability, food categories, and media sources. Unique (non-duplicate) products with on-package LMC were assessed using Health Canada's proposed nutrient profiling model for advertising restrictions (detailed in Study 1).⁴⁵

2.2 Results

Presence of LMC on food packages

Over the year-long data collection period, 299 unique products featured cartoon LMC. Many of these products were available in multiple stores and for multiple months. In total, 1,530 products were identified as having on-package LMC from all stores and months combined (**Table 1**).

Figure 1 provides a visual depiction of the month-to-month fluctuation of these products by store. For the months tracked, LMC use on food packages generally increased during the spring and summer across all stores except Dollarama, where the frequency remained fairly consistent. In the largest stores surveyed, children could encounter up to 54 products —*in one store visit*— displaying characters from their favourite entertainment media. For instance, packages featuring Paw Patrol, Pokémon, Sponge Bob SquarePants, Scooby Doo, and Sesame Street were captured every month of the audit on products that included fruit snacks, cookies, cereal, pasta, yogurt, ice cream, and pancake mix. **Table 2** details the most consistently recorded products with on-package LMC across all stores (products available two-thirds of the year). Approximately one in eight unique products with LMC were regular offerings in the stores visited. Several products with LMC were available at most or all stores audited. **Table 3** details the most common LMC found across stores, with products like corn chips, drinkable yogurt, fruit snacks, and soda pop packaged with images referencing popular video games, children's cartoons (television/streaming), and blockbuster movies.

*The same store locations were visited for each audit except T&T for May-June 2024 (the original location was closed due to fire damage and so a different T&T store was visited).

Table 1. Monthly availability of products with on-package LMC by store (N=1,530)

Store	Month												
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Walmart	41	21	29	20	24	24	36	54	45	44	52	37	427
Superstore	39	23	23	26	28	31	32	34	36	36	42	32	382
Safeway	34	24	29	20	20	21	18	25	30	34	38	28	321
T & T	8	22	23	20	20	19	18	20	23	21	22	31	247
Shoppers	12	10	9	6	4	7	4	8	15	3	4	5	87
Dollarama	9	4	8	5	4	4	5	3	5	7	7	5	66
TOTAL	143	104	121	97	100	106	113	144	154	145	165	138	1530

Figure 1. Monthly availability of products with on-package LMC by store (N=1,530)

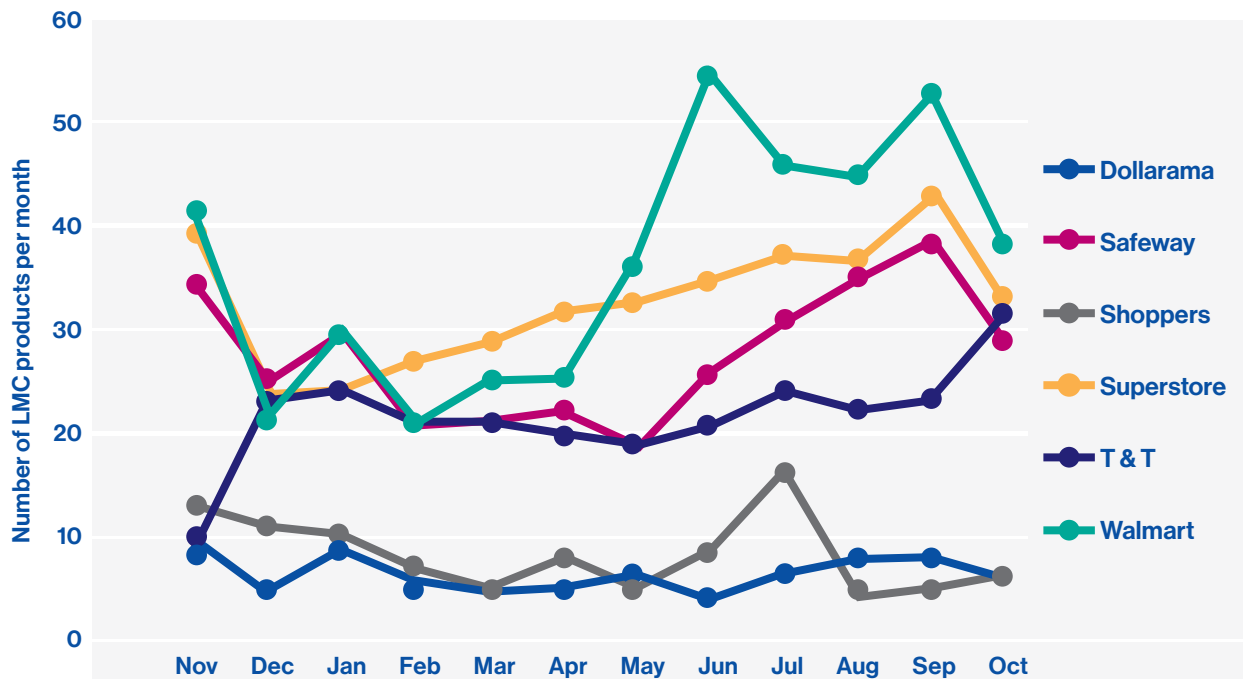


Table 2. Most consistently recorded products with on-package LMC across all stores over time*

Product and LMC	Month Available												Total Months
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
Betty Crocker Fruit Flavoured Snacks- Paw Patrol	X	X	X	X	X	X	X	X	X	X	X	X	12
Betty Crocker Fruit Flavoured Snacks - SpongeBob SquarePants	X	X	X	X	X	X	X	X	X	X	X	X	12
Betty Crocker Fruit Flavoured Snacks - Scooby Doo	X	X	X	X	X	X	X	X	X	X	X	X	12
Christie Cocoa Cookies - Pokemon	X	X	X	X	X	X	X	X	X	X	X	X	12
Christie Honey Cookies - Pokemon	X	X	X	X	X	X	X	X	X	X	X	X	12
Danone Danino Strawberry Banana Drinkable Yogurt - Paw Patrol	X	X	X	X	X	X	X	X	X	X	X	X	12
Danone Danino Strawberry Drinkable Yogurt - Paw Patrol	X	X	X	X	X	X	X	X	X	X	X	X	12
Heinz Pasta Shapes in Tomato Sauce - Scooby Doo	X	X	X	X	X	X	X	X	X	X	X	X	12
Kraft Dinner Mac & Cheese - Paw Patrol	X	X	X	X	X	X	X	X	X	X	X	X	12
Nola Chocolate Brownie Boost Bars - Sesame Street (Cookie Monster)	X	X	X	X	X	X	X	X	X	X	X	X	12
Nola Chocolate Power Pancakes - Sesame Street (Abby Cadabby)	X	X	X	X	X	X	X	X	X	X	X	X	12
Nola Original Power Pancakes - Sesame Street (Elmo)	X	X	X	X	X	X	X	X	X	X	X	X	12
Post Cocoa Pebbles Cereal - The Flintstones	X	X	X	X	X	X	X	X	X	X	X	X	12
Post Fruity Pebbles Cereal - The Flintstones	X	X	X	X	X	X	X	X	X	X	X	X	12
Annie's Macaroni & Cheese - Spiderman		X	X	X	X	X	X	X	X	X	X	X	11
Danone Danino Vanilla Drinkable Yogurt - Enchantó	X	X	X	X	X	X	X	X	X	X		X	11
Great Value Chocolate Ice Cream Cups - Paw Patrol	X	X	X	X	X	X	X	X		X	X	X	11
Great Value Vanilla Ice Cream Cups - Paw Patrol	X	X	X	X	X	X	X	X	X	X	X		11
Laverland Crunch Sea Salt Roasted Seaweed Snack - Minions		X	X	X	X	X	X	X	X	X	X	X	11
Laverland Crunch Wasabi Roasted Seaweed Snack - Minions		X	X	X	X	X	X	X	X	X	X	X	11
Nola Apple Cinnamon Boost Bars - Sesame Street (Big Bird)	X	X	X	X	X	X	X		X	X	X	X	11
Danone Danino Raspberry Drinkable Yogurt - Spiderman	X	X	X	X	X	X	X	X	X	X			10
Four Seas Chocolate Corn Snack - Crayon ShinChan		X	X	X	X	X	X	X	X	X		X	10
Four Seas Original Corn Snack - Crayon ShinChan		X	X		X	X	X	X	X	X	X	X	10
Great Value Pepperoni MEGA Pizza - Teenaged Mutant Ninja Turtles			X	X	X	X	X	X	X	X	X	X	10
Great Value Vanilla Chocolatey Ripple Ice Cream Cups - Paw Patrol	X	X	X	X	X	X	X	X	X	X	X	X	10
Betty Crocker Fruit Flavoured Snacks - Gabby's Dollhouse				X	X	X	X	X	X	X	X	X	9
Great Value Four Cheese MEGA Pizza - Teenaged Mutant Ninja Turtles			X	X	X	X	X	X	X	X	X		9
Great Value Four Meat MEGA Pizza - Teenaged Mutant Ninja Turtles			X	X		X	X	X	X	X	X	X	9
Great Value Hawaiian MEGA Pizza - Teenaged Mutant Ninja Turtles			X	X	X	X	X	X	X	X	X	X	9
Twinkle Baker Décor Sprinkle Mix - Barbie				X	X	X	X	X	X	X	X	X	9
Joseph's Nutless Clusters Mini Rice Crisps - Paw Patrol	X	X	X	X	X	X	X	X	X	X	X	X	8
Morinaga Chocolate Filled Cookies - Disney Princess	X	X	X	X	X	X	X	X	X	X	X	X	8
Morinaga Strawberry Filled Cookies - Donald Duck					X	X	X	X	X	X	X	X	8
Qingzhou Jinchaolai Foods Hawthorn Donut Stick - Toy Story (Lots-O-Huggin' Bear)			X	X		X	X	X	X	X		X	8
The Good Food Company Chocolate Chip Lunch Box Snacks - Paw Patrol	X	X	X		X	X			X		X	X	8
Twinkle Baker Décor Sprinkle Mix - Hot Wheels					X	X	X	X	X	X	X	X	8

* Products observed ≥8 months of the 12-month audit.

Table 3. Most widely available unique products with on-package LMC (n=299)

Product and LMC	Store availability						Total Stores
	Dollarama	Safeway	Shoppers	Superstore	T & T	Walmart	
Doritos Cool Ranch Chips - Madden24	X	X	X	X	X	X	6
Doritos Nacho Cheese Chips - Starfield	X	X	X	X	X	X	6
Danone Danino Strawberry Banana Drinkable Yogurt - Paw Patrol		X	X	X	X	X	5
Danone Danino Strawberry Drinkable Yogurt - Paw Patrol		X	X	X	X	X	5
Doritos Sweet Chili Heat Chips - Forza Motorsport		X	X	X	X	X	5
Post Fruity Pebbles Cereal - The Flintstones	X	X	X	X		X	5
Babybel Cheese (12 Pieces) - Disney Pixar Characters		X		X	X	X	4
Betty Crocker Fruit Flavoured Snacks - Scooby Doo		X	X	X		X	4
Betty Crocker Fruit Flavoured Snacks- Paw Patrol	X	X		X		X	4
Christie Honey Cookies - Pokemon	X	X		X		X	4
Coca-Cola Coke - Marvel (Cable)			X	X	X	X	4
Coca-Cola Coke - Marvel (Juggernaut)			X	X	X	X	4
Doritos Bold BBQ Chips - Redfall		X	X	X		X	4
Doritos Zesty Cheese Chips - Doom		X	X	X		X	4
Gogo Squeeze Apple Banana Fruit Sauce - Minions	X	X		X		X	4
Schneiders Ham Lunchmate - Minions		X	X	X		X	4
Schneiders Turkey Lunchmate - Minions		X	X	X		X	4

Media sources of on-package LMC

Among the 299 unique products featuring LMC, 58 primary characters were identified (**Table 4**). Minions, for instance, were found on 34 unique food products and Paw Patrol was found on 33. Certain LMC were found on multiple packaged products across different food categories. Notably, the top ten most prevalent LMC were featured on two-thirds of unique products across various food categories (**Table 5**). For example, Minions were used to promote lunch kits, hamburger buns, squeezable fruit snacks, drinkable yogurt, cupcakes, cookies, chocolate, and seaweed snacks. The LMC came primarily from children's television shows (34.5%) and movies* (29.3%) (**Table 6**). Video games (10.3%) and toys (10.3%) were also represented, with products featuring Minecraft, Forza Motorsport, Starfield and Hot Wheels, among other things.

*The Super Mario Bros. Movie was released in 2023; it stands as the highest grossing film based on a video game. Packaged products with Super Mario cartoon characters were from the animated movie (not the video game).

Table 4. Frequency of unique products with LMC (across all stores; 12 months) (n=299)

Licensed media character	n	%	Licensed media character	n	%
Minions	34	11.4	Starfield	2	0.7
Paw Patrol	33	1.0	Madden 24	2	0.7
Mickey Mouse & Friends	23	7.7	Crayon ShinChan	2	0.7
Hello Kitty & Friends	20	6.7	Trolls	2	0.7
Barbie	20	6.7	Popeye	2	0.7
Super Mario	19	6.4	Rudolph the Red-Nosed Reindeer	1	0.3
Pokemon	14	4.7	Elf on the Shelf	1	0.3
Hot Wheels	13	4.3	Redfall	1	0.3
Marvel	11	3.7	Lion King	1	0.3
Disney Pixar	10	3.3	Doom	1	0.3
Star Wars	7	2.3	Jurassic World	1	0.3
LOL Surprise	5	1.7	Steamboat Willie	1	0.3
Teenage Mutant Ninja Turtles	5	1.7	Jake the Pirate	1	0.3
Sesame Street	5	1.7	Encanto	1	0.3
Pingu	5	1.7	Peppa Pig	1	0.3
Disney Princess	4	1.3	The Grinch	1	0.3
BTS	4	1.3	Peanuts	1	0.3
Spiderman	4	1.3	PJ Masks	1	0.3
The Flintstones	3	1.0	Beetlejuice	1	0.3
Frozen	3	1.0	Demon Slayer	1	0.3
Harry Potter	3	1.0	Gabby's Dollhouse	1	0.3
Miraculous	3	1.0	Looney Tunes	1	0.3
Captain Tsubasa	3	1.0	SpongeBob SquarePants	1	0.3
One Piece	3	1.0	Wednesday Adams	1	0.3
Toy Story	3	1.0	Blippi	1	0.3
Crunchyroll Hime	2	0.7	Tonka	1	0.3
Elf	2	0.7	Polly Pocket	1	0.3
Forza Motorsport	2	0.7	Willy Wonka	1	0.3
Scooby Doo	2	0.7	Minecraft	1	0.3

n: frequency; % proportion

Table 5. Top ten LMC captured (by frequency) and their associated products (n=197)

Licensed media character	Product	
Minions (n=34)	Babybel Cheese	Illuminations Lollipops
	Chiquita Bananas	Kimberly's Bake Shop Frosted Cookies
	Chupa Chups Chupa Surprise	Kinder Surprise Giant Easter Egg
	Danone Danino Lactose-Free Banana Drinkable Yogurt	Kiri Cream Cheese
	Danone Danino Vanilla Drinkable Yogurt	Laverland Crunch Roasted Seaweed Gift Pack with Tumbler
	Danone Peach Go!	Laverland Crunch Sea Salt Roasted Seaweed Snack
	Danone Strawberry Banana Go!	Laverland Crunch Wasabi Roasted Seaweed Snack
	Danone Strawberry Go!	Pillsbury Ready-to-Bake Sugar Cookies
	Dempster's Hamburger Buns	Schneiders Bologna Lunchmate
	Dempster's Hotdog Buns	Schneiders Ham Lunchmate
	Gogo Squeez Apple Banana Fruit Sauce	Schneiders Nacho Lunchmate
	Gogo Squeez Apple Strawberry Fruit Sauce	Schneiders Pizza Pepperoni Lunchmate
	GoGo Squeeze Apple Apple & Apple Banana Fruit Sauce (12 Pack)	Schneiders Turkey and Ham Lunchmate Lunch Kits Multipack
	GoGo Squeeze Apple Apple & Apple Strawberry Fruit Sauce (12 Pack)	Schneiders Turkey Lunchmate
	Hostess Chocolate Cupcakes	Schneiders Two Cheese Pizza Lunchmate
	Hostess Twinkies	The Laughing Cow Cheese Dippers
	Hostess Vanilla Cupcakes	Two-Bite Mini Cupcakes
Paw Patrol (n=33)	Betty Crocker Fruit Flavoured Snacks	Regal Confections Candy Cane
	Betty Crocker Special Edition Fruit Flavoured Snacks	Regal Confections Candy Filled Cup
	Danone Danino Raspberry Drinkable Yogurt	Regal Confections Candy Filled Ornament
	Danone Danino Strawberry Banana Drinkable Yogurt	Regal Confections Christmas Chocolate Countdown Calendar
	Danone Danino Strawberry Drinkable Yogurt	Regal Confections Milk Chocolate Celebration Pop
	Flix & Pop Ups Lollipops (Chase)	Regal Confections Milk Chocolate Christmas Surprise Egg
	Flix & Pop Ups Lollipops (Sky)	Regal Confections Milk Chocolate Figure
	Great Value Chocolate Ice Cream Cups	Regal Confections Valentine's Day Candy Necklaces
	Great Value Vanilla Chocolatey Ripple Ice Cream Cups	Regal Confections Valentine's Day Gummy Candy
	Great Value Vanilla Ice Cream Cups	Regal Confections Valentine's Day Milk Chocolate Heart
	Joseph's Nutless Clusters Mini Rice Crisps	Relkon Crunchiez Surprize (Chase)
	Kinder Surprise 3 Pack	Relkon Crunchiez Surprize (Marshall)
	Kraft Dinner Mac & Cheese	Relkon Crunchiez Surprize (Rubble)
	Nickelodeon Jellybean Filled Easter Eggs	Relkon Crunchiez Surprize (Sky)
	Pez Candy Dispenser (Chase)	The Good Food Company Chocolate Chip Lunch Box Snacks
	Pez Candy Dispenser (Liberty)	
	Pez Candy Dispenser (Marshall)	
	Pez Candy Dispenser (Sky)	

Table 5. Top ten LMC captured (by frequency) and their associated products (n=197)

Licensed media character	Product	
Mickey Mouse & Friends (n=23)	Annie's Macaroni & Cheese	Morinaga Chocolate Filled Cookies (Minnie Mouse)
	Babybel Cheese (Disney 100)	Morinaga Strawberry Filled Cookies (Daisy Duck)
	Babybel Mini Rolls (Disney 100)	Morinaga Strawberry Filled Cookies (Donald Duck)
	Brothers All Natural Freeze Dried, Sliced Fuji Apples Fruit Crisps (Mickey Mouse)	Morinaga Strawberry Filled Cookies (Mickey Mouse)
	Disney Cookie/Treat Gift Box	Morinaga Strawberry Filled Cookies (Minnie Mouse)
	Disney Vanilla Ice Cream Bars (Mickey Mouse)	Morinaga Strawberry Filled Cookies (Donald Duck)
	Glico Popcan Soda Flavoured Lollipops (Mickey Mouse)	Pez Candy Dispenser (Donald Duck)
	Kellogg's Eggo Waffles (Mickey & Minnie)	Pez Candy Dispenser (Mickey Mouse)
	Kinder Surprise (Disney 100)	Regal Confections Milk Chocolate Christmas Surprise Egg (Mickey & Minnie)
	Kinder Surprise 3 Pack (Disney 100)	Regal Confections Milk Chocolate Figure (Minnie Mouse)
	Kiri Cream Cheese (Disney 100)	The Laughing Cow Cheese Dippers (Disney 100)
	Morinaga Chocolate Filled Cookies (Donald Duck)	
	Morinaga Chocolate Filled Cookies (Mickey Mouse)	
Barbie (n=20)	Create-A-Treat Decorate Your Own Cookies	Modern Gourmet Foods Frozen Hot Chocolate Mix
	Great Value Cotton Candy Dream Bars	Regal Confections Candy Cane
	Great Value Strawberry Swirl Dream Bars	Regal Confections Marshmallows
	Kimberly's Bake Shop Soft Sugar Cookies	Regal Confections Milk Chocolate Surprise Egg
	Mattel Candy Fan	Smart Sweets Pink Lemonade Dream Candies
	Mattel Candy Filled Camper Van	Twinkle Baker Décor Sprinkle Mix
	Mattel Edible Icing Sheet	Twinkle Baker Décor Unicorn Cupcake Decorating Kit
	Mattel Iced Coffee Kit	Two-Bite Mini Cupcakes
	Mattel Popping Candy	Bandai Namco Gummy Candy
	Mattel Strawberry Swirly Lollipop	
	Mattel Strawberry Candy Straw	
	Modern Gourmet Foods Colour Craze Lemonade Mixes	
Hello Kitty & Friends (n=20)	High Up Lemon Warabi Mochi Ramune Sparkling Water (Black Can)	Sanrio Bus Packaging Sesame Egg Rolls Gift Set
	High Up Lemon Warabi Mochi Ramune Sparkling Water (Purple Can)	Sanrio French Cookies
	High Up Strawberry Daifuku Ramune Sparkling Water (Black Can)	Sanrio Sesame Egg Rolls (Blue Packaging)
	High Up Strawberry Daifuku Ramune Sparkling Water (Pink Can)	Sanrio Sesame Egg Rolls (Character Packaging)
	High Up Strawberry Daifuku Ramune Sparkling Water (Red Can)	Sanrio Sesame Egg Rolls (Pink Packaging)
	High Up Strawberry Daifuku Ramune Sparkling Water (White Can)	Sanrio Square Cookies
	Hokka Ribbon Cookies	Sanrio Strawberry Marshmallows
	Pepperidge Farm Strawberry Shortcake Goldfish Graham Snacks	Sanrio Tropical Mango Marshmallows
		Sanrio Tropical Pineapple Marshmallows
		Senjakuame Fruit Candy
		Takuma Fruit Jellies

Table 5. Top ten LMC captured (by frequency) and their associated products (n=197)

Licensed media character	Product	
Super Mario (n=19)	Annie's Classic Macaroni & Cheese Annie's Shells & Aged Cheddar Annie's Shells & White Cheddar Fibre 1 Chocolately Fudge Brownies Furuta Chocolate Wheat Puffs General Mills Cinnamon Toast Crunch General Mills Honey Nut Cheerios General Mills Lucky Charms Nature Valley Almond Sweet & Salty Granola Bars Nature Valley Dark Chocolate Sweet & Salty Granola Bars Nature Valley Peanut Sweet & Salty Granola Bars	Orville Redenbacher Buttery Popcorn (10 Pack) (Mario) Orville Redenbacher Buttery Popcorn (6 Pack) (Mario) Orville Redenbacher Extra Buttery Popcorn (10 Pack) (Princess Peach) Orville Redenbacher Extra Buttery Popcorn (6 Pack) (Princess Peach) Orville Redenbacher Smart Pop! Popcorn (6 Pack) (Luigi) POGO Original Battered Hot Dog - Nintendo Super Mario Sara Lee Blueberry Lil' Bites Muffins Sara Lee Chocolate Chip Lil' Bites Muffins
Pokémon (n=14)	Cadbury Oreo Chocolate Socola Pies Cadbury Oreo Special Edition Chocolate Socola Pies (Pikachu) Cadbury Oreo Strawberry Socola Pies Christie Cocoa Cookies Christie Honey Cookies Furuta Chocolate Pocket Monster Cookies Furuta Double Chocolate Pocket Monster Cookies	Kanro Pure Fruit Gummies Lotte Apple Pocket Monster Candies Nintendo Fruits Candy Jar (Bulbasaur) Nintendo Fruits Candy Jar (Charmander) Nintendo Fruits Candy Jar (Eevee) Nintendo Fruits Candy Jar (Pikachu) Tohato Chocolate Corn Snacks
Hot Wheels (n=13)	Create-A-Treat Decorate Your Own Cookies Mattel Blue Raspberry Laser Pop Mattel Blueberry Candy Straw Mattel Blueberry Swirly Lollipop Mattel Candy Filled Suitcase Mattel Candy Filled Sweet Racer - Hot Wheels Mattel Edible Icing Sheet	Mattel Strawberry Laser Pop Mattel Tropical Fruit Candy Straw Regal Confections Candy Cane Regal Confections Marshmallows Twinkle Baker Décor Cupcake Decorating Kit Twinkle Baker Décor Sprinkle Mix
Marvel (n=11)	Coca-Cola Coke (Cable) Coca-Cola Coke (Juggernaut) Coca-Cola Coke (Wolverine) Coca-Cola Coke Zero (Ant-Man) Coca-Cola Coke Zero (Captain America) Coca-Cola Coke Zero (Dr. Strange)	Coca-Cola Coke Zero (Ms. Marvel) Coca-Cola Coke Zero (Scarlet Witch) Coca-Cola Coke Zero (Thor) Pez Candy Dispenser Eternals (Ikaris) Pez Candy Dispenser Eternals (Sersi)
Disney Pixar (n=10)	Babybel Cheese (12 Pieces) Babybel Cheese (18 pieces) Babybel Cheese (6 Pieces) Babybel Mini Rolls Betty Crocker Fruit Flavoured Snacks	Kiri Cream Cheese The Laughing Cow Cheese (24) The Laughing Cow Cheese (32) The Laughing Cow Cheese (8) The Laughing Cow Cheese Dippers

Table 6. LMC by media source (n=58).

Media source	n	%
TV Show	20	34.5
Movie	17	29.3
Video Game	6	0.3
Toy/Merchandise	6	10.3
Book	4	6.9
Anime/Manga	3	5.2
Streaming Platform	1	1.7
Music Group	1	1.7

n: frequency; % proportion

Nutritional quality of foods with LMC

The nutritional assessment was conducted on unique products, with an additional four excluded due to missing or incomplete nutrition information, for a total of 295 products. Of the products included in the nutritional analysis, 92.5% (n=273) exceeded at least one nutrient threshold. Most (53.9%) products exceeded the threshold for one nutrient of concern, 27.5% exceeded the thresholds for two nutrients, and 11.2% exceeded the thresholds for all three nutrients. Sugar was particularly problematic: 78% of products exceeded sugar thresholds, followed by saturated fat (exceeded by 33% of products) and sodium (exceeded by 32% of products).

Table 7 Details the products exceeding at least one nutrient threshold by food subcategory. Fewer than 10% of products in the dry goods and dairy categories (7.3% and 6.9%, respectively) had nutrient contents below the thresholds. The only food category in the sample with no nutrient thresholds exceeded was produce, which included foods such as bananas with Minion stickers on them. For all other subcategories, marketing by Minions — or Super Mario, Mickey Mouse, or Barbie — was primarily on products exceeding at least one nutrient threshold.

Table 7. Proportion of products with on-package LMC exceeding any nutrient threshold by subcategory (n=295)

	n	% with no threshold exceeded*	% with any threshold exceeded*
Dry goods			
Confectionery (candy/chocolate)	103	4.9	95.1
Cookies/biscuits	28	0	100
Drinks/drink boxes	19	31.6	68.4
Other	15	13.3	86.7
Chips, cheese puffs, pretzels, popcorn (includes coated popcorn), grain and pulse-based snacks, pita chips and fruit chips	13	0	100
Fruit snacks/applesauce	13	15.4	84.6
Cereal	11	0	100
Granola bars/snack bars/cereal bars	8	25	75
Pastas (boxed/canned) and soups	7	0	100
Muffins/doughnuts/toaster pastries/snack cakes (with or without icing)	7	0	100
Drink syrups/crystals/powders	6	0	100
Crackers	2	0	100
Pancake and batter mixes	2	0	100
Dairy			
Cheese	15	0	100
Milk/yogurt-based drink	13	15.4	84.6
Yogurt	1	0	100
Refrigerated and frozen food (excluding meat)			
Packaged lunch	7	0	100
Pizza pops/corn dogs, etc.	7	0	100
Ice cream	6	0	100
Frozen breakfast food	1	0	100
Refrigerated cookies	1	0	100
Bakery			
General bakery	7	0	100
Fresh produce			
Fruit/vegetable	3	100	0

n: frequency, % proportion

*Products without added fats, free sugars, or added sodium are automatically considered to be below the respective thresholds for those nutrients, regardless of their natural content levels.

Discussion

Packaged foods and beverages are everyday staples for many people in Canada, representing an ever-present opportunity for marketing to children. Amidst the growing interest in protecting children from unhealthy food and beverage marketing, this report draws attention to food packaging as a powerful and pervasive form of marketing to kids in Canada. It provides an up-to-date snapshot of child-targeted packaged foods with cartoon appeals (including generic cartoons, brand mascots, LMC, or the words *kid* or *fun*) in various retail environments across the country and assesses the nutritional quality of these products. Cartoon appeals and LMC on child-targeted food packages were found in every store visited across Canada, in diverse retail settings, and consistently throughout the year.

The products captured in this study reveal the scope of this powerful technique, with **2,737 products with cartoon appeals identified (1,157 unique products)**, extensively targeting children and those shopping with children in mind. Similar findings have been reported elsewhere: for instance, research conducted in Australian supermarkets found that child-directed characters were more than twice as common on packaging compared to other child-targeted persuasive techniques,³⁴ while an audit of 20 retail stores in France reported that 97.2% of children's food products used cartoons.³⁶ The frequency of cartoon appeals is especially concerning given the evidence of its effects, which include recent systematic reviews describing the impact on children's food choice and intake,⁴⁸ and on taste preferences for foods high in sugar, fat and/or salt.⁴³ A recent survey of 6 to 18 year-olds similarly found that self-reported exposure to cartoon characters on packaging impacted their food preferences and purchases.⁴⁹

This study provides insight into the nature of these cartoon appeals. Generic cartoons were featured on more than half of the products collected, while brand mascots/spokes characters were found on 40% of unique products. While LMC were the least prevalent type (about 10% of cartoon appeals), when used, LMC typically occupied much greater real estate on the package—most commonly, just under 50% of the front-of-package space. Along with its greater visual dominance, LMC powerfully tap into children's media preferences and excitement surrounding new entertainment, creating additional appeal. This is exacerbated when considered in tandem with the results of Study 2, which found LMC are also consistently present across stores and throughout the year.

Cartoon appeals on food packaging were found in every food category and mostly in less healthy food subcategories. **Confectionery (candy/chocolate), cookies, cereal, and salty snacks (chips, cheese puffs etc.) were the top products marketed**, by frequency, for unique products. This finding aligns with other recent studies in Canada and Australia, in which confectionery, snack foods, cereals, and crackers were among the most frequently identified subcategories with child-targeted food packaging.^{30,34} In our study, while around 80% of products with cartoon appeals were dry goods, other categories also had problematic offerings, including refrigerated and frozen foods, where the top products captured (by frequency) were frozen ices/popsicles, ice cream and lunch kits. Focusing on these individual food categories provides insight into the types of foods that have been packaged explicitly to grab our children's attention, the nature of which is largely unhealthy. Within the thousand-plus unique products captured are cookies featuring cartoon bears, ice bars promoted by pandas, packaged lunches with cartoon monsters, crème-filled snack cakes featuring Super Mario Bros., and Pizza Pops featuring Japanese anime.

More significant, however, is the fact that nearly all the foods captured exceed Canada's government-led nutrient profiling model thresholds for marketing to kids. Packaging is not currently included in the scope of Health Canada's proposed policy. However, if it was, **94.4% of products in Study 1 would be restricted from being advertised to children according to Health Canada's proposed policy. In Study 2, 92.5% of products would be restricted from being advertised to children.** This includes foods that parents might expect to be unhealthy, such as candy, but also those they might not expect, such as yogurt, granola bars or fruit snacks, or those with various nutrition and health-related claims. While these numbers are striking, they align with other studies that have applied Health Canada's nutrient profiling model to Canadian foods,

reporting that only 2.7% of products assessed would be permitted to be advertised to children.^{29,31} Ironically, after applying the proposed criteria to the products collected, this study reveals that **very few of the foods explicitly packaged to appeal to children would actually be permitted to be advertised to them.**

Strengths and Limitations

This report provides timely insight into packaged foods with cartoon appeals and LMC vying for children's attention. It offers several strengths. It provides a detailed audit of children's packaged foods undertaken in stores across the country and is the first Canadian study to examine these cartoon appeals in ethnic supermarkets and discount stores. This inclusion is an important window into the diversity of food offerings and the use of persuasive power in various retail environments. This is also the first Canadian study to focus explicitly on the LMC on packaged foods over time, revealing how popular children's media culture manifests on the food packaging targeted to them. Physically visiting brick-and-mortar stores (i.e., conducting in-store audits) is another strength because it means the studies captured the most up-to-date packaging appeals that Canadians see when shopping, as well as the most up-to-date nutrition facts and ingredients lists (packaging images/nutrition facts found on grocery store websites do not always reflect what is found in stores).

Some limitations to this work exist. This study aimed to provide a snapshot of the nature and nutritional quality of child-targeted food packaging with cartoons in Canada so that effective policies can be made. It is exploratory and, for the purposes of this report, offers a high-level overview. It does not purport to capture all instances of packaging with child-targeted cartoon appeals or to document all exposure. The products analysed represent those in the specific stores visited; different stores might yield different results. Examining more stores, store types, and locations would further enhance our understanding of these products. Additionally, the comparisons across cities or store types may present differences that reflect the specific stores visited. That said, the study captured thousands of packaged products specifically designed to attract children, and only a fraction of them fall under Health Canada's recommended thresholds for sugar, saturated fat or sodium.

Conclusion

This research contributes additional evidence of how ever-present marketing to kids is in Canada and reinforces the need to enact mandatory measures to restrict this harmful practice. It also underscores the critical need for continued monitoring of food packaging, so that future measures may be taken to protect children from its persuasive appeals.

Appendix A

Store audit types, names and locations

Mainstream

Superstore (Calgary)
Safeway (Calgary)
Superstore (Halifax)
Sobeys (Halifax)
Metro Plus Pie Ix/jean Talon (Montreal)
Maxi & Cie (Montreal) Superstore (Toronto) Sobeys (Toronto)

Appendix B

Marketing to Kids Photo Examples: Licensed Media Characters



Appendix C

Marketing to Kids Photo Examples: Brand Mascots & Generic Cartoons



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