

Nutrition marketing on processed food packages in Canada: 2010 Food Label Information Program

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Abstract: The current study describes the frequency of use of different forms of nutrition marketing in Canada and the nutrients and conditions that are the focus of nutrition marketing messages. Prepackaged foods with a Nutrition Facts table ($N = 10\,487$) were collected between March 2010 and April 2011 from outlets of the 3 largest grocery chains in Canada and 1 major western Canadian grocery retailer. The nutrition marketing information collected included nutrient content claims, disease risk reduction claims, and front-of-pack nutrition rating systems (FOPS). We found that nutrition marketing was present on 48.1% of Canadian food packages, with nutrient content claims being the most common information (45.5%), followed by FOPS on 18.9% of packages. Disease risk reduction claims were made least frequently (1.7%). The marketing messages used most often related to total fat and trans fat (15.6% and 15.5% of nutrient content claims, respectively). Limiting total and trans fats is a current public health priority, as recommended by Health Canada and the World Health Organization. However, other nutrients that are also recommended to be limited, including saturated fats, sodium, and added sugars, were not nearly as prominent on food labels. Thus, greater emphasis should be placed by the food industry on these other important nutrients. Repeated data collection in the coming years will allow us to track longitudinal changes in nutrition marketing messages over time as food marketing, public health, and consumer priorities evolve.

Key words: nutrition marketing, nutrition claims, Canada, food supply, food labels, public health.

Résumé : La présente étude décrit la fréquence d'utilisation de diverses formes de marketing nutritionnel au Canada et relève particulièrement les conditions et les nutriments mis de l'avant par le message de commercialisation de l'aliment. De mars 2010 à avril 2011, on recueille dans les entrepôts des trois plus grandes chaînes d'épicerie au Canada et d'un important détaillant de produits alimentaires dans l'Ouest canadien, des aliments préemballés présentant un tableau de la valeur alimentaire ($N = 10\,487$). Les renseignements recueillis au sujet de la commercialisation du produit alimentaire sont allégations en matière de contenu en nutriments, de diminution du risque de maladie et les systèmes d'évaluation nutritionnelle inscrits sur l'étiquette au-devant des emballages (« FOPS »). Les résultats indiquent la présence de messages commerciaux de nature alimentaire sur 48,1 % des emballages de produits alimentaires canadiens dont le plus fréquent (45,5 %) est le contenu en nutriments et, en deuxième, le FOPS (18,9 %). Les allégations les moins fréquentes portent sur la diminution du risque de maladie (1,7 %). Le message commercial le plus utilisé porte sur le contenu en gras total et trans (15,6 % et 15,5 % des allégations). Limiter la consommation des gras globalement et des gras trans est une priorité actuelle en santé publique comme le recommandent Santé Canada et l'Organisation mondiale de la santé. Toutefois, les autres nutriments qu'on devrait limiter (gras saturés, sodium, sucres ajoutés) ne sont pas tellement visibles sur les étiquettes des emballages. L'industrie alimentaire devrait donc mettre plus d'importance sur ces autres nutriments dits prioritaires. La poursuite de la cueillette d'information au moyen d'études longitudinales va nous permettre de suivre les modifications des messages commerciaux de nature alimentaire au fil de l'évolution de la commercialisation des produits alimentaires, de la santé publique et des priorités des consommateurs. [Traduit par la Rédaction]

Mots-clés : marketing nutritionnel, allégations nutritives, Canada, approvisionnement alimentaire, étiquette des produits alimentaires, santé publique.

Introduction

Consumers are provided with nutrition information on food labels to help them make healthy food choices at point of purchase. In Canada, food label nutrition information comes in a variety of forms, including the mandatory Nutrition Facts table (NfT), voluntary nutrient content claims, disease risk reduction health claims, and front-of-pack nutrition rating systems (FOPS) (Government of Canada 2003; Canadian Food Inspection Agency 2012). The definitions of these forms of nutrition information are given in Table 1. The mandatory NfT regulations were introduced in 2002 and were fully implemented by 2007 (Government of Canada 2003); the NfT currently appears on almost all prepackaged foods in Canada. The 2 other forms of government-regulated

nutrition information, nutrient content claims and disease risk reduction claims, are presented voluntarily by food manufacturers whose products meet the criteria for their use, as described in nutrition labelling regulations (Government of Canada 2003). Like nutrient content claims and disease risk reduction claims, FOPS are voluntary; however, there are no specific regulations governing their use. For the purpose of this paper, all these latter forms of voluntary nutrition information on food labels, whether covered by specific regulations or not, will be collectively termed "nutrition marketing"; they are of particular interest because they are used on food packages at the food manufacturer's discretion.

In Canada, food product labels are consumers' primary source of food and nutrition information. A 2008 survey found that more

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Table 1. Nutrition labelling used in the Canadian marketplace.

Type of labelling	Definition	Examples
Regulated		
Nutrition Labelling	“Refers to the standardized presentation of the nutrient content of a food” (Government of Canada 2003)	Nutrition Facts table
Nutrient content claims	“A claim that describes the amount of a nutrient in a food” (Government of Canada 2003)	“Low fat” “Trans fat free” “Reduced sodium” “Excellent source of calcium”
Disease risk reduction claims	“A statement that describes the characteristics of a diet associated with the reduction of the risk of developing a diet-related disease or condition” (Government of Canada 2003)	“A healthy diet low in saturated and trans fats may reduce the risk of heart disease. (Naming the food) is free of saturated and trans fats” (Government of Canada 2003)
No specific regulations		
Front-of-pack labelling	“Systems that use nutrient criteria and symbols to indicate that a product has certain nutritional characteristics. Symbols are often placed on the principal display panel of the product, but may also be found on the side, top, or back panels or on self tags” (Institute of Medicine 2010)	Whole Grains Council's Whole Grain Stamp Heart and Stroke Foundation's Health Check logo Kraft's Sensible Solutions PC Blue Menu Pepsi's Smart Spot

Note: Definitions from the Government of Canada (2003) and the Institute of Medicine (2010).

Canadians obtain nutrition information from food labels (68%) than from the Internet (51%), print media (46%), health professionals (40%), or government materials (22%) (Canadian Council of Food and Nutrition 2008). Furthermore, consumers' food choices are being increasingly driven by the communicated health benefits of food, as published on food packages and labels (Strategic Counsel 2009). National monitoring data regarding nutrition labels to help identify the nutrition messages conveyed to consumers exist in the United States and the European Union (Legault et al. 2004; Brandt et al. 2009; Brandt et al. 2010; Storcksdieck genannt Bonsmann et al. 2010). For example, data showed that total fat, calories, and sodium are the nutrients emphasized most commonly on US labels (Brandt et al. 2010). However, similar analyses have not been carried out in Canada. Canadian health professionals have raised concerns that manufacturers are focusing on fat, cholesterol, and heart disease to the exclusion of other factors that impact chronic disease risk, such as limiting sodium consumption (Strategic Counsel 2009). Despite these concerns, it is unclear which health or nutrition messages are most prominent on Canadian food labels. The purpose of this study was to describe the frequency of use of the different forms of nutrition marketing in Canada, including nutrient content claims, disease risk reduction claims, and FOPS, as well as to determine which nutrients and health conditions and which food categories are the focus of these messages.

Materials and methods

Food Label Information Program

The Food Label Information Program (FLIP) is a database of Canadian food package label information that was developed at the University of Toronto. The purpose of the FLIP is to provide an overview of the nutrition information found on the labels of food products in the Canadian marketplace. The FLIP was modelled on similar food label surveys developed in the United States (Brandt et al. 2010; Colby et al. 2010) but includes more foods and a broader range of nutrition marketing information.

Data collection

The data acquisition occurred between March 2010 and April 2011 and was carried out in the Greater Toronto Area and Calgary, Alberta. Data were collected from outlets of the 3 largest grocery chains in Canada (Mintel International 2009) and 1 major western Canadian grocery retailer. The former included Loblaw's (Loblaw's, No Frills, Great Canadian SuperStore), Metro, and Sobeys (Greater Toronto Area) and the latter, Safeway (Calgary). In total, these

chains represented 56% of the market share of food products sold in Canada (Mintel International 2009), which ensured that most national-brand products were collected, in addition to a wide range of private label-brand products.

Food products were collected from 23 distinct predefined food categories (e.g., bakery products) described in Schedule M of the *Food and Drug Regulations* (FDR) [B.01.001] (CRC 2012). Schedule M sets out the reference amounts for 153 subcategories (e.g., “crackers, hard bread sticks and melba toast”) that must be used as the basis for making a nutrient content claim or a disease risk reduction claim. Foods in the FLIP were also subcategorized based on Schedule M subcategories. By systematically scanning grocery store shelves, we aimed to collect every food product with an NFT within each predefined category, including all available national and private-label brands, but excluding seasonal products (e.g., eggnog) and foods from the natural health sections of the stores. Food products sold at multiple retailers (such as national-brand products) were purchased only once. When multiple sizes of a product were available, only 1 size was purchased.

The food label from each product collected was removed, retained, and assigned a database ID. Trained data entry staff recorded the following details from each label into the FLIP: product name, Schedule M category, Universal Product Code, company, brand, price, container size, nutrient content claims, disease risk reduction claims, FOPS, NFT information, and date and location of purchase. Price was recorded from the cash register receipt. UPC codes were entered electronically using a handheld scanner (OPN 2001, Opticon Inc., Renton, Wash., USA).

Categorization of claims and front-of-pack information

Claims that have clearly defined wording in the Canadian regulatory environment were categorized and quantified. We included FOPS, despite the lack of regulation, because they have been defined by the Institute of Medicine (2010), as described later, and are currently prominent on Canadian foods. Nutrition and disease risk reduction claims were categorized according to the 47 nutrient content claims and 5 disease risk reduction claims described in the FDR, including all their permitted wording variations (Government of Canada 2003). Additional wording variations detailed in the Canadian Food Inspection Agency's Guide to Food Labelling and Advertising were also included (Canadian Food Inspection Agency 2012). The disease risk reduction claims that were captured included the following diet-disease relationships: (i) sodium, potassium, and hypertension; (ii) calcium, vitamin D, and osteoporosis; (iii) saturated fat, trans fat, and coronary heart disease; (iv) fruits, vegetables, and cancer; and

(v) nonfermentable carbohydrates and dental caries. Two additional disease risk reduction claims regarding coronary heart disease risk were approved in 2010, 1 regarding plant sterols (May 2010) and the other regarding oats (November 2010) (Health Canada, 2012). Because this occurred during data collection, the true frequency of use of these 2 disease risk reduction claims could not be captured accurately in the FLIP and are not reported here.

FOPS were identified using the definition published in the Institute of Medicine (2010) Phase I report on their examination of FOPS. This report subdivided FOPS into 3 distinct categories, which we used to classify the FOPS in the FLIP. These categories are (i) nutrient-specific systems, which include symbols that display the amount per serving of select nutrients and symbols based on claim criteria; (ii) summary indicator systems, which include single symbols or scores that provide summary information about a product's nutrient content; and (iii) food group information systems, which include symbols based on the presence of a food group or food ingredient.

Data validation

Multiple methodologies were used to ensure the accuracy of data entry and coding: (i) calorie calculations based on Atwater factors were used to identify data entry errors, and any differences between calculated and recorded calories of 20% or greater were checked manually against the product label information, and (ii) NFt data were sorted for outliers for each nutrient. To aid with proper classification of nutrient content claims on food packages, data entry staff were provided with examples of the various claims both pictorially and in text. Claims identified by data entry staff were then verified by members of the research team (AS, TE, JA, and CW). FOPS were identified and categorized independently by 2 members of the research team (AS and TE), and disagreements over FOPS were resolved in consultation with the rest of the research team.

Data analysis

Descriptive statistics (frequencies) were computed using SAS 9.3 (SAS Institute, Cary, N.C., USA).

Results

The FLIP database contained nutrition information for a total of 10 487 unique food products. The categories containing the largest proportion of products included bakery products (15.6%), combination dishes (10.0%), and dairy products and substitutes (8.0%) (Table 2).

Overall, 48.1% of food products ($n = 5044$) had some form of nutritional information in addition to the NFt, with 45.5% carrying at least 1 Health Canada approved nutrient content claim, 1.7% carrying at least 1 disease risk reduction claim, and 18.9% carrying at least 1 FOPS.

Nutrient content claims

Claims about total fat, trans fat, and vitamins and minerals were made most often. The percentage of products sold for each type of claim, as well as the 5 product categories with the highest percentage of these claims, are described in Table 3. Product categories containing the highest percentage of a particular claim included soups with total fat claims (53.0%); legumes with fibre claims (47.6%); potatoes, sweet potatoes, and yams with trans fat claims (46.3%); snacks with trans fat claims (44.2%); and meal replacements with vitamin and mineral claims (42.1%).

Disease risk reduction claims

Claims about saturated and trans fat and coronary heart disease were the most prevalent, followed by claims about fruits and vegetables and cancer. Table 4 shows the percentage for each disease risk reduction claim, as well as the top product categories carrying these claims.

Table 2. Number of products per Schedule M food category.

Category	No. products	% of total products (N = 10 487)
Bakery products	1636	15.6
Combination dishes	1044	10.0
Dairy products and substitutes	839	8.0
Fruit and fruit juices	800	7.6
Cereals and other grain products	777	7.4
Sauces, dips, gravies, and condiments	691	6.6
Meat, poultry, their products, and substitutes	643	6.1
Vegetables	623	5.9
Desserts	525	5.0
Fats and oils	476	4.5
Snacks	471	4.5
Marine and fresh-water animals	336	3.2
Soups	334	3.2
Beverages	257	2.5
Sugars and sweets	235	2.2
Miscellaneous	198	1.9
Legumes	189	1.8
Nuts and seeds	109	1.0
Potatoes, sweet potatoes, and yams	95	0.9
Salads	60	0.6
Meal replacements	57	0.5
Dessert toppings and fillings	55	0.5
Egg and egg substitutes	37	0.4

Note: Food categories as defined in Schedule M of the *Food and Drug Regulations* (CRC 2012).

FOPS labelling

One hundred fifty-eight unique FOPS were identified in the FLIP. Of these, only 2 were developed by nonprofit groups (the Heart and Stroke Foundation of Canada's Health Check and the Whole Grain Information Council's Whole Grain Stamp). The different FOPS included 80 nutrient-specific systems (38 systems that displayed the amount per serving of select nutrients and 42 systems that used symbols based on nutrient content claim criteria), 11 summary indicator systems (7 systems with a single symbol and 4 systems with a single score related to a popular weight-loss program), 47 food-group information systems (12 systems based on the presence of a food group and 35 systems based on the presence of a food ingredient), and 20 hybrid systems that combined elements from 2 or more of the preceding categories. The nutrients highlighted in the nutrient-specific systems varied from 1 system to the next and from product to product within the same system; food group information systems focused primarily on fruit and vegetables (23 of 47 systems) and whole grains (22 of 47 systems). The nutrients and food components upon which summary indicator systems were based were usually not apparent on the food label.

Overall, 18.9% of products had at least 1 FOPS, with summary indicator systems being the most prevalent (7.5%). The proportion of products within each FOPS category, as well as the top categories carrying these systems symbols, can be found in Table 5.

Discussion

To the best of our knowledge, this study presents the first comprehensive report on the frequency of use and types of nutrition marketing found on Canadian food packages. Nutrition marketing was present on 48.1% of Canadian food packages, with government-regulated nutrient content claims being the most common (45.5%). In contrast, disease risk reduction claims were made much less frequently (1.7%), despite the great attention these claims have received from the food industry (George Morris Centre 2008) and the extensive amount of policy work conducted by Health Canada (Health Canada 2009, 2011). FOPS were the

Table 3. Percentage of products with nutrient content claims.

Type of claim	Description of claim variations	% of all products with claim	Top 5 product categories* with claims	
			Product category	%
Total fat claims (n = 1631)	Free of fat, low in fat, reduced in fat, lower in fat, (%) fat free, no added fat	15.6	Soups	53.0
			Cereals and other grain products	29.3
			Egg and egg substitutes	27.0
			Desserts	26.9
			Dairy products and substitutes	25.3
Trans fat claims (n = 1622)	Free of trans fat, reduced in trans fat, lower in trans fat	15.5	Potatoes, sweet potatoes, and yams	46.3
			Snacks	44.2
			Bakery products	36.4
			Fats and oils	28.2
			Miscellaneous	26.3
Vitamin and mineral claims (n = 1512)	Any vitamin or mineral claim containing the following: "contains", "source of", "contains X essential nutrients", "high in", "higher in...than..."	14.4	Meal replacements	42.1
			Fruit and fruit juices	34.0
			Dairy products and substitutes	30.0
			Cereals and other grain products	27.9
			Vegetables	23.9
Fibre claims (n = 1039)	Source of fibre, high source of fibre, very high source of fibre, more fibre	9.9	Legumes	47.6
			Cereals and other grain products	38.7
			Soups	18.6
			Snacks	15.9
			Bakery products	13.4
Saturated fat claims (n = 908)	Free of saturated fat, low in saturated fat, reduced in saturated fat, lower in saturated fat	8.7	Potatoes, sweet potatoes, and yams	33.7
			Fats and oils	27.6
			Meal replacements	24.6
			Bakery products	18.2
			Snacks	14.7
Cholesterol claims (n = 676)	Free of cholesterol, low in cholesterol, reduced in cholesterol, lower in cholesterol	6.5	Egg and egg substitutes	27.0
			Potatoes, sweet potatoes, and yams	25.3
			Fats and oils	18.3
			Bakery products	15.6
			Snacks	9.1
Sodium claims (n = 474)	Free of sodium, low in sodium, reduced in sodium, lower in sodium, no added sodium, lightly salted	4.5	Soups	17.7
			Cereals and other grain products	14.9
			Nuts and seeds	11.0
			Potatoes, sweet potatoes, and yams	7.4
			Vegetables	7.1
Sugar claims (n = 418)	Free of sugars, reduced in sugars, lower in sugars, no added sugars	4.0	Fruit and fruit juices	27.3
			Beverages	13.6
			Sugars and sweets	5.1
			Desserts	4.8
			Fats and oils	4.8
PUFA claims (n = 346)	Source of omega-3 PUFA, source of omega-6 PUFA	3.3	Marine and freshwater animals	30.4
			Egg and egg substitutes	21.6
			Fats and oils	19.8
			Salads	5.0
			Bakery products	3.1
Energy and calorie claims (n = 261)	Free of energy, low in energy, reduced in energy, lower in energy, source of energy, more energy, light in energy	2.5	Beverages	27.6
			Meal replacements	19.3
			Fats and oils	6.5
			Sugars and sweets	6.4
			Desserts	4.0
Protein claims (n = 221)	Source of protein, excellent source of protein, more protein	2.1	Egg and egg substitutes	13.5
			Marine and freshwater animals	9.5
			Meat, poultry, their products and substitutes	9.2
			Dairy products and substitutes	9.2
			Meal replacements	7.0
Lean claims (n = 86)	Lean, extra lean	0.8	Meat, poultry, their products and substitutes	12.9
			Snacks	0.2
			Combination dishes	0.2

Note: Classified according to the 47 nutrient content claims and permitted wording variations listed in the *Food and Drug Regulations* and the Canadian Food Inspection Agency's Guide to Food Labelling and Advertising (Government of Canada 2003; Canadian Food Inspection Agency 2012). PUFA, polyunsaturated fatty acid.

*Of 23 product categories, as defined in Schedule M of the *Food and Drug Regulations* (CRC 2012).

Table 4. Percentage of products with disease risk reduction health claims.

Disease risk reduction claims*	% of total products with claims	Top product categories† with claims
Saturated and trans fat and CHD	1.1	Cereals and other grain products Bakery products Fats and oils
Fruits and vegetables and cancer	0.5	Fruit and fruit juices Vegetable products
Sodium and (or) potassium and hypertension	0.1	Cereals and other grain products Fruit and fruit juices
Calcium and (or) vitamin D and osteoporosis	0.1	Fruit and fruit juices Meal replacements Dairy products and substitutes

*Health Canada approved disease risk reduction claims as of 2010. A disease risk reduction claim regarding plant sterols was approved during the collection period in May 2010 and regarding oats in November 2010; therefore, their true frequencies of use were not captured in FLIP and are not reported here. CHD, coronary heart disease.

†Of 23 product categories, as defined in Schedule M of the *Food and Drug Regulations* (CRC 2012).

second-most-prevalent form of nutrition marketing after nutrient content claims, and were found on 18.9% of packages.

We also found that the regulated nutrition marketing messages used most often referred to total fat and trans fat (15.6% and 15.5% of nutrient content claims, respectively). The prominence of these nutrients on packages is consistent with the directional statements in Canada's Food Guide (Health Canada 2007) and recommendations in the World Health Organization's (2004) global strategy, which emphasize limiting total fat and trans fat in addition to saturated fat, sugar, and salt. However, more recent nutrition recommendations have put less emphasis on limiting total fat and more on limiting trans and saturated fats (Beaglehole et al. 2011). Although the disease risk reduction claims regarding saturated and trans fats and coronary heart disease are consistent with this recommendation, these appeared on only 1.1% of products. Nutrient content claims about saturated fat were found less often (8.7%) than were claims about total fats or trans fats. Furthermore, claims about sodium and sugar, which may be helpful to consumers because there is strong evidence to support their link to a number of diet-related chronic diseases (Aller et al. 2011; Arcand et al. 2011; Bibbins-Domingo et al. 2010; Strazzullo et al. 2009; Welsh and Cunningham 2011) and recommendations have been made to limit their consumption (Beaglehole et al. 2011; Health Canada 2007; World Health Organization 2004), were much less prevalent (4.5% and 4.0%, respectively). Ideally, marketing messages should focus more on nutrients such as these, deemed to be of public health significance, to ensure that nutrition marketing offers the maximum health benefit to consumers. However, claims about sodium may have been less prevalent at the time of data collection (2010–2011) compared with the present time (2013), because the release of Canada's Sodium Reduction Strategy (Sodium Working Group 2010) occurred in mid-2010. The emphasis on sodium, however, had already translated into a large increase in the percentage of Canadian consumers reporting that they selected foods based on the amount of salt (57% in 2001 vs 70% in 2008) (Canadian Council of Food and Nutrition 2009). Thus, food manufacturers may increase their use of sodium claims in future years to keep up with consumer demand for this information.

Similar food label monitoring databases exist in other countries (Brandt et al. 2010; Storcksdieck genannt Bonsmann et al. 2010), and several notable similarities and differences between

Canada and other countries in terms of food supply and nutrition marketing were seen. In relation to the frequency of nutrition marketing, the Canadian food supply appears to be similar to the US food supply. One US study found that 49% of products contained some form of nutrition marketing (Colby et al. 2010). Similarly, another US study found that 53.2% of all food packages displayed a nutrient content claim, whereas only 4.8% included a health claim such as a disease risk reduction claim (Brandt et al. 2010). Data from the European Union, on the other hand, revealed that only 25% and 2% of products carried a nutrition or health claim, respectively; however, this varied greatly among countries (Storcksdieck genannt Bonsmann et al. 2010). In contrast to our study, data from the United States and the European Union demonstrate that only 5.7% and 1%–2% of products, respectively, use nutrition marketing in the form of FOPS-type logos (Storcksdieck genannt Bonsmann et al. 2010; Colby et al. 2010). The higher frequency of use of FOPS observed in our study (18.9%) may reflect the broader definition of FOPS used in this analysis. This definition included all systems and symbols that summarize the key nutritional aspects and characteristics of food products consistent with the definition used by the Institute of Medicine (2010), whereas US and European Union studies that were conducted earlier focused on logos and symbols that require qualifying products to meet specific nutrient criteria (Storcksdieck genannt Bonsmann et al. 2010; Colby et al. 2010). Alternatively, it may reflect the higher percentage of FOPS in Canada or a trend toward the increased use of FOPS by food manufacturers and retailers in recent years. Subsequent FLIP data collections in Canada and other jurisdictions will be able to track such changes.

Maintaining a current and up-to-date FLIP provides advantages in tracking changes in manufacturers' use of claims and changes to the food supply in response to public health campaigns and consumer demand, to guide policy decisions and promote consumer health. Planned data collection in 2013 will make the FLIP a longitudinal database, which will allow us to track changes in food label nutrition and marketing information over time as new public health priorities emerge and consumer interest in specific nutrients evolves.

Although this research evaluated a large number of products, some limitations must be considered. Although we collected foods sold by 4 of the 5 largest national chains, food collection was limited to the Greater Toronto Area and Calgary, and thus may not be completely representative of Canada. However, food products are relatively standardized across Canada and thus available to a large percentage of the overall population. The Greater Toronto Area also accounts for a large percentage (18.1%) of the entire Canadian population (City of Toronto 2012), and foods were collected at Safeway to represent a major food retailer in the western provinces. Further, we did not adjust our data for the relative market-share sales figures for each product. However, to ensure that we collected most national-brand products and a representation of private-label brands in Canada, we collected foods from the 3 top-selling retailers and covered the main geographic regions, with the exception of northern Canada. An additional limitation is the sometimes subjective nature of identifying FOPS. Although many products made use of systems and symbols that met the definition of FOPS by the Institute of Medicine (2010), these systems and symbols were not always formally described as FOPS by the system's proprietor (either on the food package or on its Web site) or given an identifiable system name.

We have shown that nutrient content claims are the most prevalent type of nutrition marketing in Canada, followed by FOPS, whereas disease risk reduction claims are relatively uncommon. Nutrition marketing messages strongly emphasize total fat and trans fat but focus little attention on other nutri-

Table 5. Percentage of products carrying FOPS.

Type of FOPS	Category description	% of all products with FOPS	Top 5 product categories* with FOPS	
			Product category	%
Nutrient-specific systems (n = 511)	Systems with symbols that display the amount per serving of select nutrients or use symbols based on nutrient content claim criteria.	4.9	Meal replacements	14.0
			Cereals and other grain products	12.9
			Potatoes, sweet potatoes and yams	8.4
			Nuts and seeds	8.3
			Desserts	7.6
Summary indicator systems (n = 785)	Systems with a single symbol, icon, or score that provide summary information about the nutrient content of a product.	7.5	Egg and egg substitutes	46.0
			Soups	18.9
			Fruit and fruit juices	14.0
			Bakery products	10.3
			Combination dishes	9.5
Food-group information systems (n = 369)	Systems with symbols based on the presence of a food group or food ingredient.	3.5	Cereals and other grain products	12.2
			Fruits and fruit juices	6.4
			Vegetables	5.8
			Snacks	5.5
			Bakery products	4.2
Hybrid (n = 729)	Systems that combine features of 2 or more of the preceding FOPS categories.	7.0	Legumes	11.6
			Egg and egg substitutes	10.8
			Meat, poultry, their products and substitutes	10.7
			Marine and fresh water animals	10.4
			Bakery products	9.7

Note: Classified according to the 3 FOPS categories described in the Examination of Front-of-Package Nutrition Rating Systems and Symbols: Phase I Report (Institute of Medicine 2010). FOPS, front-of-pack nutrition rating systems.

*Of 23 product categories, as defined in Schedule M of the *Food and Drug Regulations* (CRC 2012).

ents of public health concern, such as saturated fat, sodium, and sugar. It may be useful to consumers for the food industry to better align nutrition marketing with public health priorities, with a greater emphasis on these other nutrients. Repeated data collection in the coming years will allow us to track longitudinal changes over time as food marketing, public health, and consumer priorities evolve.

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