



Initial overview of 15
categories of processed
foods available in
Québec grocery stores
2016-2022



 **FOOD QUALITY
OBSERVATORY**

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1 Highlights

This report provides an initial synopsis of the supply and purchases for 15 categories of food collected in Québec or Canadian grocery stores between 2016 and 2022. These categories are as follows: breakfast cereals, sliced breads, pizzas, ready-to-serve soups, sliced processed meats, yogurts and dairy desserts, frozen meals, granola bars, pasta sauces, cookies, sausages, salty snacks, crackers, cheese products as well as flavoured milks and plant-based beverages. This report: 1) summarizes the nutritional composition of products available on the market and purchased by consumers, 2) presents food categories having a high quantity of saturated fats, sugars and/or sodium as well as low fibre, 3) provides improvement simulations for the nutrients concerned and adapted to each food category and 4) identifies the food categories considered priorities for change. Here is a summary of the primary results:

- A total of **5132 food products** was identified in grocery stores. Sales data was obtained for 77% of these products, representing **79% of total sales** in these categories.
- Overall, **66% of products purchased** exceeded at least one of the 15% Daily Value Thresholds for saturated fats, sugars or sodium (or 30% for pizzas and frozen meals).
- More specifically, 48% of products purchased exceeded the 15% DV for **sodium** (or 30% for pizzas and frozen meals). The ready-to-serve soups category contained the largest proportion of products surpassing this threshold, as all products purchased in this category exceeded it. Almost all pizzas, sliced processed meats, and sausages also exceeded this threshold. As for the 2012 Health Canada-issued voluntary sodium reduction targets, 71% of products purchased still exceed these targets. Pizzas, cheese products, sliced breads and salty snacks most often exceed their voluntary sodium reduction target.
- For **saturated fats**, 25% of products purchased exceeded the 15% DV threshold (or 30% for pizzas and frozen meals). Cheese products are the category with the highest proportion of products exceeding the threshold for saturated fat, followed by sausages, pizzas, then cookies.
- As for **sugars**, 16% of products purchased exceeded the 15% DV threshold (or 30% for pizzas and frozen meals). Cookies had the largest proportion of products exceeding this threshold, followed by granola bars and breakfast cereals.

- In total, 83% of products purchased do not reach the 15% DV for **fibre**. Among the categories that may contain fibre, cookies, salty snacks, crackers and granola bars have the lowest proportion of products reaching this threshold.
- As for the Health Canada-established **front-of package nutritional symbol**, 60% of all products studied (data weighted for sales) would have had the symbol for at least one nutrient. Sodium is the nutrient for which the symbol would most often be present.
- **Theoretical 5%, 10% or 15% improvement simulations** for the applicable nutrient levels showed that these modifications would result in a substantial improvement in terms of compliance with the DV thresholds. Moreover, the proposed improvements would help to reduce purchases of saturated fat by 65.7 g (-0.7%), sugars by 288 g (-0.8%) and sodium by 19,710 mg (-1.9%) annually per Québécois.
- From a public health perspective, among the 15 food categories analyzed, the five food categories contributing the most to **purchases** in sugars, sodium and saturated fats are breakfast cereals, sliced breads, cookies, salty snacks and cheese products. Therefore, these categories should be the first ones to be improved. More specifically, breakfast cereals and cookies should reduce their **sugar** content by approximately 15% and 10%, respectively. The **sodium** content should be reduced for sliced breads (-5%), salty snacks (-15%) and cheese products (-10%). Lastly, a 15% reduction in **saturated fats** should be a priority for cookies as well as a 5% reduction for cheese products.

In sum

The initial synopsis of 15 categories of processed foods shows that **a large proportion of products in several categories exceed the 15% DV thresholds** (or 30% for pizzas and frozen meals) for saturated fats, sugars and/or sodium. Moreover, 60% of the purchased products listed in this study would bear the symbol on the front of their packaging revealing high levels of saturated fats, sugars and/or sodium. Improvement simulations proposed for each category helped to estimate the impact of reductions on Québécois' daily intake and to establish which food categories need to be improved as a priority. Furthermore, a large proportion of products (83%) do not meet the 15% DV threshold for fibres. Monitoring and measuring the evolution of these 15 food categories over the coming years will help inform public policies and industry practices.

Background

The Food Quality Observatory’s mission (hereinafter referred to as the “Observatory”) is to describe and monitor the evolution of the food supply to generate new knowledge and act collectively to improve its quality and accessibility. The Observatory’s studies by food category aim to analyze the products offered and sold in grocery stores to monitor their evolution over time. The selection process for the food categories under study was carried out using a rigorous approach¹. First of all, after a consultation with the Observatory’s knowledge users², the scientific committee prioritized the categories of foods to be studied according to four main criteria: the impact on health, the variability of nutritional quality, the household penetration rate, and the potential for product improvement. It was ensuing this process that the following 15 food categories were analyzed:

- Breakfast cereals
- Sliced breads
- Pizzas
- Ready-to-serve soups
- Sliced processed meatsⁱ
- Yogurts and dairy dessertsⁱ
- Frozen meals
- Granola bars
- Pasta sauces
- Cookies
- Sausagesⁱ
- Salty snacks
- Crackers
- Cheese productsⁱ
- Flavoured milks and plant-based beverages

The selected food categories were generally among the 10 largest food sources of sugar, sodium or saturated fats for Québécois, according to the 2015 Canadian Community Health Survey (CCHS)³. Additionally, most of these categories contributed significantly to the sodium content⁴, and/or free sugars⁵ of the grocery basket for Québécois in 2015-2016. Knowing that excessive intake of these three nutrients can contribute to the development of chronic non-communicable diseases such as hypertension, type 2 diabetes or certain types of cancer⁶, it is important to focus on them in public health policies.

ⁱAs well as their plant-based equivalents.

2.1 Evolution of provincial and federal public policy

Various public health measures and policies have been introduced in Québec since the Observatory's creation in 2016. First of all, the Politique gouvernementale de prévention en santé⁷ (PGPS) was created in 2016, and its purpose, through measure 3.2, was to improve the nutritional quality of food in Québec. The Observatory was also mandated as part of this policy to measure progress in reducing foods' fat, salt and sugar content.

During that same year, Health Canada updated food labeling regulations that involved the Nutrition Facts table and the list of ingredients to make them easier for consumers to understand⁸. These changes included standardizing the reference amount for similar foods, adding a percent daily value (DV) for sugars, and grouping sugar-based ingredients together in the ingredient list. Manufacturers have had five years to comply with this new labelling. In 2018, Health Canada implemented a ban on the use of partially hydrogenated oils, which meets the commitment to eliminate industrially produced trans fats in foods and thus reduce the risk of heart disease in Canada⁹. Two years after the regulation, no foods containing partially hydrogenated oils were to be sold in Canada.

The ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec (MAPAQ) issued a bio-food policy in 2018¹⁰. Objective 1.4 was intended to promote access to a supply of nutritious foods. Therefore, players in the bio-food sector were invited to improve the nutritional value of processed foods in Québec and promote them.

At the federal level, Health Canada published a new version of Canada's Food Guide (CFG) in 2019¹¹. This latest guide suggests eating plenty of vegetables and fruits, whole grain foods and protein foods. It suggests choosing plant-based protein foods more often and limiting the consumption of foods that are highly processed in sodium, sugars and saturated fats.

In addition, new voluntary sodium reduction targets were issued by Health Canada in 2020¹² and renewed those proposed in 2012¹³. It is hoped that these targets will be met by 2025.

In the summer of 2022, Health Canada also announced new regulations regarding front-of-package labeling¹⁴. Consequently, products with high amountsⁱⁱ of saturated fats, sugars and/or sodium must have a front-of-package indicator symbol by January 1, 2026. This will enable consumers to easily identify products with high levels of these nutrients and could encourage the industry to reformulate its products.

Thus, the data presented in this report will be of interest for monitoring different categories of foods and documenting their evolution over time in parallel with these policies and regulations.

2.2 Overview of the quality of the food supply in Canada and internationally

Studies assessing the quality of the food supply have also been undertaken in other Canadian provinces and elsewhere in the world. First, because of the Food Label Information Program (FLIP), Toronto researchers have been collecting information on the nutritional composition and food product packaging found mainly in Ontario grocery stores since 2010. The information for each product was collected from the packaging and the Nutrition Facts table. Here are some results from the four data collections carried out over the last few years:

- In **2010**, an analysis of 7,234 food products revealed that 71% exceeded Health Canada's voluntary sodium reduction targets¹⁵. Among the food categories with the highest sodium contents were ready-to-serve soups (636 mg/100 g), Asian noodles (783 mg/100 g), broths (642 mg/100 g) and frozen appetizers (642 mg/100 g).
- In **2013**, an analysis of sugars was also carried out¹⁶. It was then noted that the food categories with the highest sugar contents were confectionery (50 g/100 g), desserts (15 g/100 g) and bakery products (14 g/100 g). Of the 15,342 products studied, 37% had sugar contents exceeding 15% of the DV¹⁷.
- In **2017**, they observed that out of 8,277 products representing 50% of sales in Canada, 66% of them would have the symbol on the front of their packaging for at least one nutrient (32% for sodium, 28% for sugars and 28% for saturated fats)¹⁸.

ⁱⁱHigh content meets or exceeds the 10%, 15% or 30% daily value threshold for a given nutrient, according to the reference amount of the prepackaged product. The calculation is carried out on the indicated portion or the reference amount, whichever is greater.

- In **2020**, they collected nutritional information for 74,445 products from 101 food categories through company and retailer websites¹⁹. Although the number of products identified was very large, the researchers observed that the nutritional composition was available online for only 60% of the products while the list of ingredients was available for only 45% of the products. In fact, no current regulations require merchants to provide this information on their websites or to update it. Nutritional information directly on products remains more reliable, but measuring the quality of the food supply across the country in this way remains a major challenge.

In France, between 2008 and 2016, the *Observatoire de la qualité de l'alimentation (Oqali)* collected the nutritional composition and packaging information from 30,125 products across 32 food categories²⁰. This enabled them in particular to identify allergens, additives, and the nutritional composition of each category separately and to monitor the evolution of the quality of the offer over time. However, it should be noted that no analysis has been carried out combining all food categories' nutritional composition.

In the United Kingdom, researchers recorded the sodium content of more than 40,000 foods between 2008 and 2009²¹. They observed that the largest contributors to sodium purchases were table salt (23%), processed meats (18%), bread and baked goods (13%), dairy products (12%) as well as sauces and spreads (11%). In 2020, the food categories with the highest sodium levels were salty snacks (640 mg/100 g) and cheeses (640 mg/100 g)²².

In New Zealand (2019) and Australia (2021), researchers assessed the food supply by measuring nutritional composition, degree of processing, nutritional profiling score and compliance with Australian food guidelines^{23,24}.

- The New Zealand database included 13,506 food products from 59 food categories²³. According to their nutritional guidelines, the food categories with the highest proportion of products of low nutritional value were cookies, granola bars, confectionery, cream, desserts, ice cream, processed meats, sauces, jams, spreads and dips, as well as salty snacks. The food categories with the highest sodium levels were fish and fish products (1760 mg/100 g), sauces, dressings, spreads and dips (1173 mg/100 g), meat and meat products (771 mg/100 g), as well as salty snacks (590 mg/100 g). Jams (56 g/100 g), candies (48 g/100 g), and granola bars (27 g/100 g) had the highest sugar content. Follow-up studies are planned in the coming years.
- The Australian database included a total of 18,206 products from 15 food categories and 46 subcategories²⁴. According to the Australian Dietary Guidelines, the following food categories had the highest proportion of products of low nutritional value: cookies and crackers, cakes, muffins and pastries, desserts, ice creams and frozen desserts, jams and marmalades, processed meats, sports drinks, energy drinks, soft drinks and salty snacks. These researchers also assessed changes in the food supply's nutritional composition between 2019 and 2021. The beverage category experienced the most changes, with an overall decrease in energy contents (-23 kJ/100 ml). They also noticed a significant decrease in sugar levels for soft drinks

(-1.0 g/100 ml) as well as for milk-based protein drinks (-1.8 g/100 ml). No significant decrease in sodium levels was observed, suggesting that manufacturers have not specifically focused on meeting the sodium reduction targets under the voluntary government Healthy Food Partnership program established in 2020²⁵.

In 2014, in Argentina, an analysis of 1,320 products from 14 food categories identified that the food categories with the highest sodium contents were appetizers (1,415 mg/100 g), sausages (1,050 mg/100 g) and pre-prepared meals (941 mg/100 g)²⁶. This study is part of the Food Monitoring Group initiative, whose purpose is to measure and monitor the nutritional composition of processed foods around the world^{27,28}.

In India, an analysis of sodium content data collected between 2012 and 2014 for 5,796 processed products revealed that only 35% of the products analyzed had the sodium content indicated on the packaging, with the value missing for 65% of the products²⁹. This missing information makes it difficult for consumers to choose healthy foods and makes it impossible to measure and monitor the food supply. Among their data, the food category with the highest sodium levels was sauces and spreads (2,213 mg/100 g).

2.2 Purpose and relevance of the Observatory's work

According to the literature review, few studies have focused on the nutritional composition value of several food categories in a blended manner. In addition, the current situation in Québec is very little known since most of the studies cited were carried out elsewhere in Canada or around the world. Also, the data currently available in Canada is not weighted according to sales. Analyses that have weighted according to purchases made by consumers make it possible to draw a closer picture of what the population actually consumes³⁰⁻³² and make it possible to identify the food categories that most contribute to the nutrients that should be limited.

On the other hand, the majority of these studies targeted one nutrient at a time in their analyses, whereas an approach presenting different nutrients is of great interest (e.g., to draw a more complete picture of the composition of available foods or to better take into account food processing, which can improve one nutrient to the detriment of another). In such a context, the Observatory's work proves not only relevant but also very important since it will make it possible to detail the quality of the food supply for 15 categories of processed foods available and widely consumed in Québec in order to objectively monitor their evolution over time. Such monitoring will support long-term actions to improve these food categories' nutritional quality and better understand their impacts on consumer purchasing behaviour.

3 Objectives

The objectives of this study on the 15 categories of foods analyzed are as follows:

- 1) a) Summarize the product diversity and market coverage of the 15 food categories analyzed.
b) Report the average nutritional composition and average selling price of foods offered and sold on the market for the 15 food categories analyzed.
- 2) Identify the proportion of products from the food categories studied that:
 - a) Exceed their daily value threshold for saturated fats, sugars and/or sodium.
 - b) Meet the daily value threshold for fibre.
 - c) Exceed the voluntary sodium reduction target issued in 2012 by Health Canada.
 - d) Should display the front-of-package nutrition symbol.
- 3) Simulate theoretical improvements and measure their impacts on the nutritional composition of the 15 food categories analyzed.
- 4) Identify the contribution to nutrient intake of the different food categories analyzed based on their respective sales.
- 5) Identify food categories and nutrients to be improved as a priority according to their contribution to nutrient purchases and the extent of the impact of theoretical improvements.

Methodology

4.1 Nutritional composition data

Data collections for different food categories were carried out in supermarkets between 2016 and 2022 (e.g., Metro, IGA, Provigo), big box stores (e.g., Walmart, Costco) and specialty grocery stores (e.g., Avril, Rachele- Béry), or through their online stores. These collections were carried out in Québec City or Montreal and their surrounding areas by the Observatory or the Protégez-Vous team or across Canada by the Health Canada team. For more methodological details, the specific reports³³ for each food category and the report on the initial overview methodology¹ are available at: www.foodoffer.ca.

Figure 1 presents the order in which product collections were carried out in grocery stores for the 15 food categories studied. Some collections took place over several months and sometimes they were not completed in a single year (e.g., sliced breads were collected from December 2016 to March 2017). Note that the collection start year is used throughout the report. The figure also illustrates the different public policies regarding healthy eating implemented during the same period. Thus, since data collections for different food categories are spread over several years, they may be subject to different political and regulatory contexts.

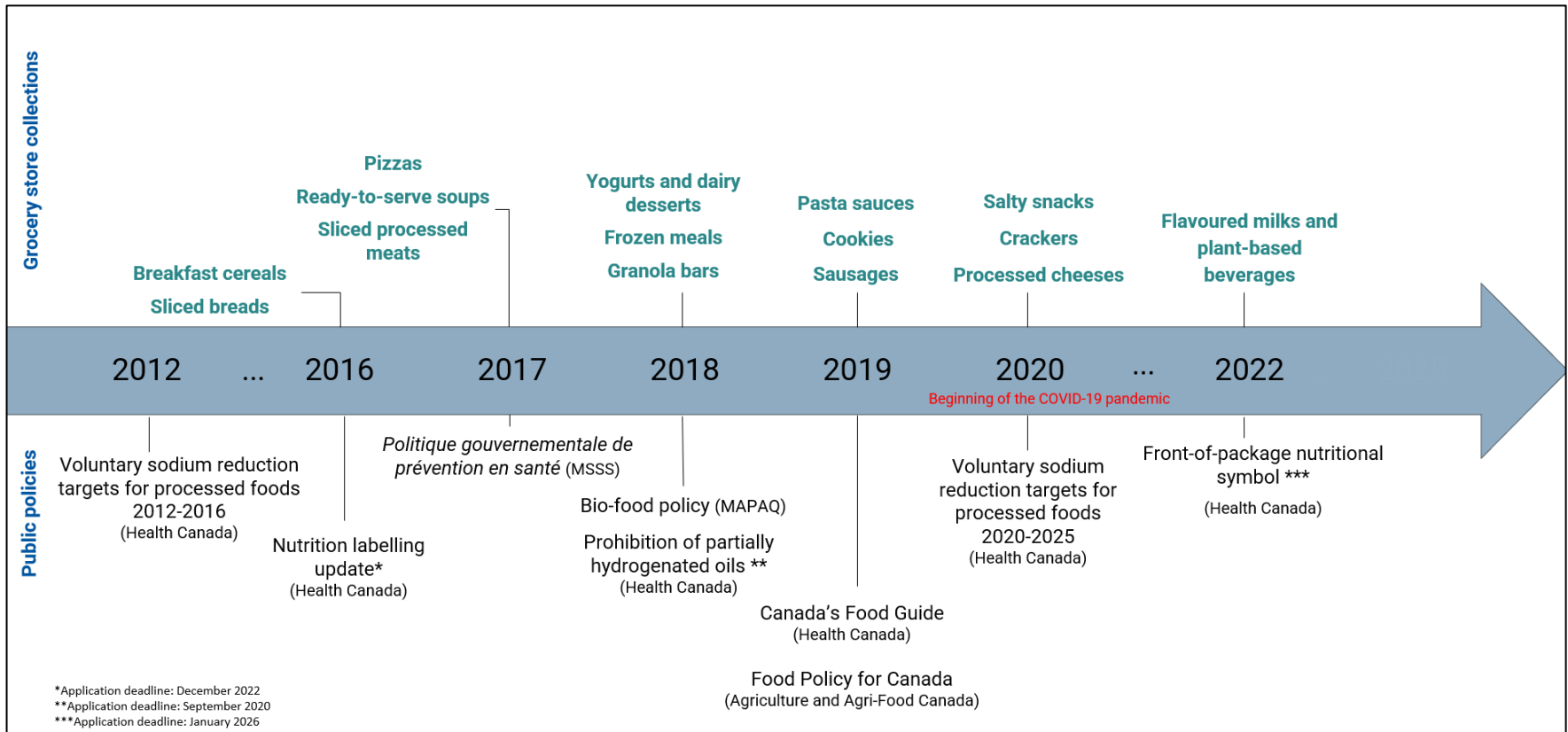


Figure 1. Collection dates for products from each food category and public policies on healthy eating

All the information found on the product packaging was entered in an Excel file using double coding. The data entered into the Excel sheet included, among others, the brand, the product name, the universal product code (UPC), the nutritional value table, the list of ingredients and the product claims. More specifically, the nutritional composition variables used for the purposes of the present analyses are the following: energy (kcal), fats (g), saturated fats (g), carbohydrates (g), total sugars (g)ⁱⁱⁱ, fibre (g), protein (g) and sodium (mg). The regular price per package was also documented by calculating the average of the prices observed in the various grocery stores visited or on the websites. The selling price per portion was then calculated.

4.2 Food purchasing data

Purchasing data helps to assign weight to foods proportional to their purchases. Thus, the nutritional composition of a highly sold product will weigh more in the balance than that of a scarcely sold product. This method makes it possible to better estimate what the population consumes. Databases listing purchases were therefore used to cross-reference this data with those of their nutritional composition. More specifically, NielsenIQ provided purchasing data for food categories sold in Québec or Canada. These databases cover a period of 52 weeks corresponding to the collection period in stores. Sales volume in kg (hereinafter referred to as “sales”) is used throughout the report. Most of the information found in this database comes from the optical scanning of products purchased at the cash registers of the stores of the main food chains and pharmacies in Québec (e.g., Sobeys, Metro, Loblaw [national brands only], Walmart [national brands only]). Some of the information, however, comes from a sales projection made from purchasing data from a panel of Homescan consumers (i.e. 12,000 households across Canada, statistically representative of the population) and supplements the information for non-participating retailers (e.g., warehouse club network [e.g., Costco] and dollar stores [e.g., Dollarama]). Lastly, since small chains (e.g., Marché Richelieu) cannot provide sales information for all of their stores, an audit was carried out to estimate the market they represent as precisely as possible. The database did not include convenience stores and gas stations, but they represent only 3% of the entire market.

The following Figure 2 presents the different production steps that are carried out for each of the 15 food categories, with details on the origin of the data.

ⁱⁱⁱThe term “sugars” will be used throughout the report in order to lighten the text.



Figure 2. Steps of the methodology

4.3 Cross-referencing with nutritional data

For each food category, cross-referencing the nutritional composition databases and the purchasing data was accomplished using the UPC, then by product name when matching by UPC was impossible. Using this method, of the 5,132 products listed in the nutritional composition database, sales data was available for 3,941 of them, or 77% of the products. The sales volume of products for which nutritional and sales information was available amounts to nearly 402 million kg. Compared to the total sales volume in the NielsenIQ database for these food categories, which totals almost 507 million kg, this represents an average market coverage of 79% for these products.

4.4 Statistical analyses

Descriptive statistics were calculated for all objectives. They were first carried out by giving equal weight to all products (offer), then by weighting for the sales volume (purchases). The term “offer” will be used throughout the report to refer to the products offered that come from the 15 food categories studied in this report. Please note that it is understood that these 15 categories do not cover the entire food offering in grocery stores. As for the term “purchases”, it represents the products from these same 15 categories for which the nutritional data has been weighted according to sales. This provides a better overview of what may have actually been consumed. Also, the definition of a serving varies from one food category to another.

Here are some details relating to the analyses completed:

- ✓ The data used for the DV threshold figures has been weighted for sales to better represent what the consumer is buying. Thus, what is illustrated in these figures further highlights what represents a public health issue. Moreover, the $\geq 15\%$ DV threshold (or $\geq 30\%$ for pizzas and frozen meals) was selected since it is used to represent a high quantity of a given nutrient³⁴. For fibre, the threshold of ≥ 4 g (equivalent to 15% of the DV) was also used during the analyses since this threshold corresponds to the claim “high source of fibre”³⁵. If the reference quantity of a food category was variable or less than 50 g, a 50 g portion was used to perform the analyses. This portion was selected since it was the regulation proposed by Health Canada³⁶ at the time when the initial overview analyses were carried out.
- ✓ Concerning the voluntary sodium reduction targets, those of 2012 were used rather than those of 2020 since it was the 2012 targets that were in effect during the majority of the initial portraits.
- ✓ Still using the weighted data for sales, 5%, 10% or 15% improvement simulations for the applicable nutrients were carried out. An indicator was then developed to consider the level of effort required by the industry to improve a food product in a given food category. This indicator was calculated as follows: percentage of additional products meeting the 15% DV threshold for a given effort (5%, 10% or 15% improvement) divided by this percentage of effort (5%, 10% or 15%).
 - For example, if a 10% reduction in sugar content increases the proportion of products respecting this threshold from 50% to 58%, the indicator is 0.8 (yield/effort = 8%/10%). The highest indicator between the three percentages of effort determines the chosen improvement.
 - If the same changes were observed with 5%, 10% or 15%, 5% was chosen to still promote improvement.

Note that tests were first carried out using a standard deviation or half a standard deviation to determine what level of improvement to consider. However, considering the great variability in nutritional composition within the same food category, their use was not retained since the proposed changes were too drastic. Theoretical improvements of 5%, 10% or 15% make it possible to be more realistic while having a considerable impact on the number of products respecting the 15% or 30% DV thresholds.

- ✓ Regarding the nutritional symbol on the front of Health Canada's package, the proportions of products that would have displayed the symbol for saturated fats, sugars and/or sodium were determined according to regulations in force³⁷. More specifically, the $\geq 30\%$ threshold was used for main meals with a reference quantity of 200 g or more, the $\geq 10\%$ threshold was used for categories with a reference quantity of 30 g and less, and finally, the $\geq 15\%$ DV threshold was used for all other products. The DV percentage calculation is based on the content of the nutrient of interest per serving indicated on the nutritional facts table or per reference quantity using the higher value between the two. Exemptions specific to saturated fats, sugars and sodium were also applied for dairy products whose calcium content reaches a particular threshold ($\geq 10\%$ of the DV for calcium if the reference quantity is 30 g or

less or $\geq 15\%$ of the DV for calcium if the reference quantity is more than 30 g) and for dairy drinks sold in reusable glass containers.

- ✓ The annual contribution of nutrients per individual for a year was calculated by accumulating the nutrients from all products sold and dividing by the number of Québécois during the year of data collection.
- ✓ In addition to the annual contribution of nutrients per individual for the 15 food categories, it was possible to calculate the percentage represented by the total daily contribution of all of these products to the daily nutrient intake in the study. Daily intake was estimated for a 2,000-calorie diet using the range of acceptable values for macronutrients (lipids, carbohydrates, fibre and proteins)³⁸ and the average intakes of the Québec population reported by the *Institut national de santé publique du Québec* for saturated fats, sugars and sodium³ (see table 3). Contribution to daily intake was then calculated by dividing the contribution of a nutrient by its estimated daily intake. For example, the percentage of saturated fat contribution to daily intake was calculated as follows: (2.78 g (total daily saturated fat contribution from the 15 food categories analyzed) / 25 g (estimated daily intake for saturated fat)) * 100 = 11.1%. To calculate the percentage of energy from processed foods, data from the 2015 CCHS were used. The latter revealed that almost half (48.9%) of daily energy intake came from ultra-processed foods³⁹. Although some food categories studied are not classified as “ultra-processed” according to the NOVA^{iv} model, this estimate is the closest to the consumption of processed foods. The percentage of energy from processed foods was therefore calculated by dividing the average daily contribution by the energy intake from ultra-processed foods for a 2,000-calorie diet (2,000 * 0.489 = 978 calories; 279/978 = 28.5%).

^{iv}The NOVA classification system is used globally to classify foods based on the scale and purpose of industrial food processing.

- ✓ The specific contribution of a nutrient from a given category out of the entire contribution of the 15 categories was also calculated. For example, the percentage of the annual saturated fat contribution from cookies was calculated as follows: $189 \text{ g} / 1016 \text{ g (annual contribution in saturated fat from the 15 categories)} * 100 = 18.9\%$.
- ✓ Concerning the improvement priorities, they were determined by taking into account the high content of a given nutrient in the products, the contribution to those nutrients, and the extent of the impact of a reformulation. More specifically, the improvement priorities were established based on the food categories with the greatest proportions of products exceeding the 15% DV threshold in saturated fats, sugars and/or sodium and the categories contributing most to purchases of these three nutrients. For example, all cheese products have a content greater than 15% of the DV for sodium, and among the 15 categories studied, this is the third category contributing the most to sodium intake in the Québec population. Therefore, sodium in cheese products was determined to be a top priority. This approach, therefore, makes it possible to identify the most urgent changes that would have the greatest impact on the Québec population's diet.

Results and data interpretation

5.1 Product diversity and market coverage (Objective 1 A)

Table 1 presents, for each food category, the year in which the collection was started, the number of different products (diversity), the number of products for which sales data was available and the proportion that these products represent of the category's total sales in the province of Québec or Canada.

Table 1. Diversity of products offered and market coverage of different food categories in Québec or Canada

Food categories	Collection Year	Diversity of Products Offered (n)	Products with Sales Data (n (%))	Proportion of products with sales data on the entire market (%)
Breakfast cereals	2016	331	308 (93)	90
Sliced breads	2016	294	262 (89)	75
Pizzas*	2017	155	155 (100)	~80
Ready-to-serve soups	2017	223	180 (81)	92
Sliced processed meats	2017	361	317 (88)	62
Yogurts and dairy desserts	2018	380	325 (86)	86
Frozen meals	2018	386	275 (71)	70
Granola bars	2018	310	240 (77)	75
Pasta sauces	2019	322	210 (65)	88
Cookies	2019	694	494 (71)	87
Sausages	2019	289	214 (74)	63
Salty snacks	2020	627	503 (80)	91
Crackers	2020	439	223 (52)	94
Cheese products	2020	118	87 (74)	72
Flavoured milks and plant-based beverages	2022	203	148 (73)	80
Total		5132	3941 (77)	79

* Canadian sampling

A total of 5132 different products were identified. The food categories with the greatest diversity of products are cookies (n=694), salty snacks (n=627) and crackers (n=439). Conversely, the food categories with the lowest product diversity are cheese products (n=118), pizzas (n=155) and flavoured milks and plant-based beverages (n=203). On average, 77% of the products studied had sales data available. Products whose nutritional composition data was linked to sales data represented, on average, 79% of sales volume in Québec or Canada in the NielsenIQ database.

5.2 Nutritional composition and selling price (Objective 1 B)

Table 2 presents the average nutritional composition of the supply and purchases of each food category per serving. Data per 100g is presented in the Appendix (Table 5). In short, the nutritional composition of the “offer” refers to the average nutritional composition of the products found on the shelves. For its part, the nutritional composition of “purchases” corresponds to the nutritional composition weighted according to each product’s sales.

Table 2. Nutritional composition and selling price of the different categories of foods offered and purchased, per portion

	Portion	Energy (kcal)		Fats (g)		Saturated Fats (g)		Carbohydrates (g)		Fibre (g)		Sugars (g)		Proteins (g)		Sodium (mg)		Selling Price (\$)	
		Offer	Purchases	Offer	Purchases	Offer	Purchases	Offer	Purchases	Offer	Purchases	Offer	Purchases	Offer	Purchases	Offer	Purchases	Offer	Purchases
Food Categories (Offer/Purchases)*																			
Breakfast cereals (n=331 / n=306)	55 g	218±23	210±20	3.9±3.6	2.6±2.6	0.9±1.3	0.8±1.6	41±6	44±4	4.7±3.1	4.4±3.8	11.4±5.6	12.8±5.5	5.3±2.2	4.7±1.7	148±117	216±125	0.75±0.35	0.60±0.15
Sliced breads (n=294 / n=262)	2 slices	188±45	189±34	2.9±1.8	2.3±0.9	0.5±0.3	0.5±0.2	35±10	35±7	3.8±2.2	2.7±1.7	2.7±2.8	3.0±2.4	7.1±2.6	7.3±1.6	289±102	331±83	0.59±0.23	0.41±0.10
Pizzas (n=155 / n=155)	200 g	469±52	474±51	18.4±5.5	19.5±5.7	7.0±2.4	7.5±2.5	56±7	55±6	3.5±1.3	3.3±1.2	6.6±2.9	6.7±2.95	19.9±3.7	19.8±3.4	994±206	1066±193	1.67±0.41	1.61±0.38
Ready-to-serve soups (n=223 / n=180)	250 ml	130±49	130±51	4.2±4.2	3.5±4.2	1.4±1.8	1.1±1.2	18±6	19±6	3.0±2.1	3.9±3.0	4.8±3.7	3.5±2.7	4.8±2.5	5.3±2.6	611±163	715±132	1.74±0.72	1.06±0.45
Sliced processed meats (n=361 / n=317)	55 g	108±58	99±45	6.4±6.0	6.2±5.1	2.2±2.2	2.2±1.8	1±1	2±1	0.1±0.4	0.0±0.2	0.4±0.7	0.6±0.7	11.3±3.0	8.7±2.4	617±264	542±148	1.77±0.78	1.09±0.62
Yogurts and dairy desserts (n=380 / n=325)	1 unit	105±48	76±29	2.8±3.5	1.5±1.4	1.7±2.5	0.9±0.8	15±6	12±5	0.4±1.1	0.1±0.4	11.5±4.8	9.2±4.1	4.9±2.9	3.7±1.5	65±44	53±19	0.92±0.63	0.48±0.2
Frozen meals (n=386 / n=275)	1 meal	358±128	331±100	10.8±7.3	10.2±6.6	3.9±3.5	3.7±2.8	48±18	44±13	4.0±2.4	3.1±1.4	8.1±7.2	6.8±6.0	17.3±6.3	15.8±5.4	710±276	698±237	3.85±1.63	2.89±1.08
Granola bars (n=310 / n=240)	1 bar	144±37	143±30	5.3±2.8	5.1±2.4	1.5±1.0	1.6±1.0	22±5	23±5	2.4±1.5	2.0±1.3	9.5±3.6	9.9±3.7	2.9±2.3	2.5±1.6	81±46	94±42	0.70±0.33	0.56±0.18
Pasta sauces (n=322 / n=210)	125 ml	90±43	73±37	4.7±4.4	3.0±3.7	1.6±2.5	1.1±2.2	9±3	9±2	1.8±0.9	1.9±0.8	5.1±2.2	5.3±1.4	2.7±1.9	2.5±1.2	456±172	476±110	1.15±0.60	0.67±0.26
Cookies (n=696 / n=494)	1 portion	143±33	141±28	6.2±2.2	5.7±1.7	2.7±1.8	2.3±1.4	20±5	21±5	1.0±0.8	0.8±0.7	9.9±3.4	10.4±3.2	1.8±0.9	1.6±0.7	81±48	87±43	0.52±0.34	0.39±0.16
Sausages (n=289 / n=214)	55 g (cooked/pre cooked) or 75 g (raw)	145±40	156±33	10.3±4.8	12.6±3.5	3.6±2.0	4.2±1.5	3±2	4±1	0.2±0.4	0.1±0.3	0.6±0.9	0.5±0.9	10.0±2.7	8.2±1.8	430±96	483±78	1.09±0.55	0.71±0.27
Salty snacks (n=627 / n=503)	50 g	251±25	262±19	13.0±4.6	14.7±3.7	1.9±2.1	1.9±1.3	30±5	29±4	2.4±1.6	1.9±1.0	2.0±3.3	1.3±1.8	3.6±2.0	3.2±1.0	326±159	332±131	0.79±0.37	0.71±0.20
Crackers (n=439 / n=223)	1 portion	99±27	90±14	3.1±2.0	3.4±1.4	0.7±1.0	0.8±0.6	16±5	13±2	1.2±1.2	0.7±0.7	1.2±1.4	0.9±1.0	2.3±1.0	1.7±0.5	144±73	150±50	0.58±0.39	0.33±0.13
Cheese products (n=118 / n=87)	30 g	76±16	76±12	5.7±2.0	5.2±1.7	3.5±1.5	3.1±1.1	3±1	4±2	0.1±0.3	0.0±0.1	1.7±1.2	2.2±1.1	3.0±1.6	3.8±1.3	229±143	365±130	0.62±0.37	0.45±0.18
Flavoured milks and plant-based beverages (n=203 / n= 148)	250 ml	115±60	123±49	3.8±1.9	3.3±1.1	1.2±1.5	1.1±0.9	15±11	18±10	1.0±1.2	0.7±0.8	11.1±10.4	14.7±10.4	5.5±5.2	5.3±3.2	129±51	149±47	1.14±0.80	0.85±0.33

*Number of products offered ("Offer")/number of products for which sales data was available ("Purchases").

5.3 Daily value threshold for purchases and improvement simulations (Objectives 2 and 3)

Beyond the absolute nutritional value, the nutritional composition of food categories can be illustrated in a relative manner by comparing it with Health Canada's proposed daily value (DV). The 15% DV threshold is generally the representation of a given nutrient per stated serving. The following figures illustrate the different categories of foods found above the threshold and also provide 5%, 10% or 15% improvement simulations for the nutrients of interest, i.e. saturated fats (Figures 3 and 4), sugars (Figures 5 and 6) and sodium (Figures 7 and 8), per serving or per 50 g, if the serving is less than 50 g⁴⁰. Furthermore, Figures 9 and 10 present the proportion of products respecting the 15% DV threshold for fibre and improvement simulations. Unlike other nutrients, reaching this threshold for fibre is desirable. The proportion of products exceeding the thresholds for each category is presented in the Appendix (Table 6). Overall, 66% of products purchased exceed at least one of the DV thresholds for saturated fats, sugars or sodium.

More specifically, Figure 3 presents the average (diamond) and median (horizontal line) of the **saturated fats** content weighted for sales per serving for different food categories. In this and the following Figures, the box plot lines (lines above and below each box) represent the interquartile range being 1.5 times larger than the median. The 15% DV threshold (or 30% for pizzas and frozen meals) for this nutrient is also indicated by horizontal lines in Figure 3, in order to illustrate the proportion of products exceeding these thresholds. It should be noted that, overall, 25% of products purchased exceed the DV thresholds for saturated fats (data not shown).

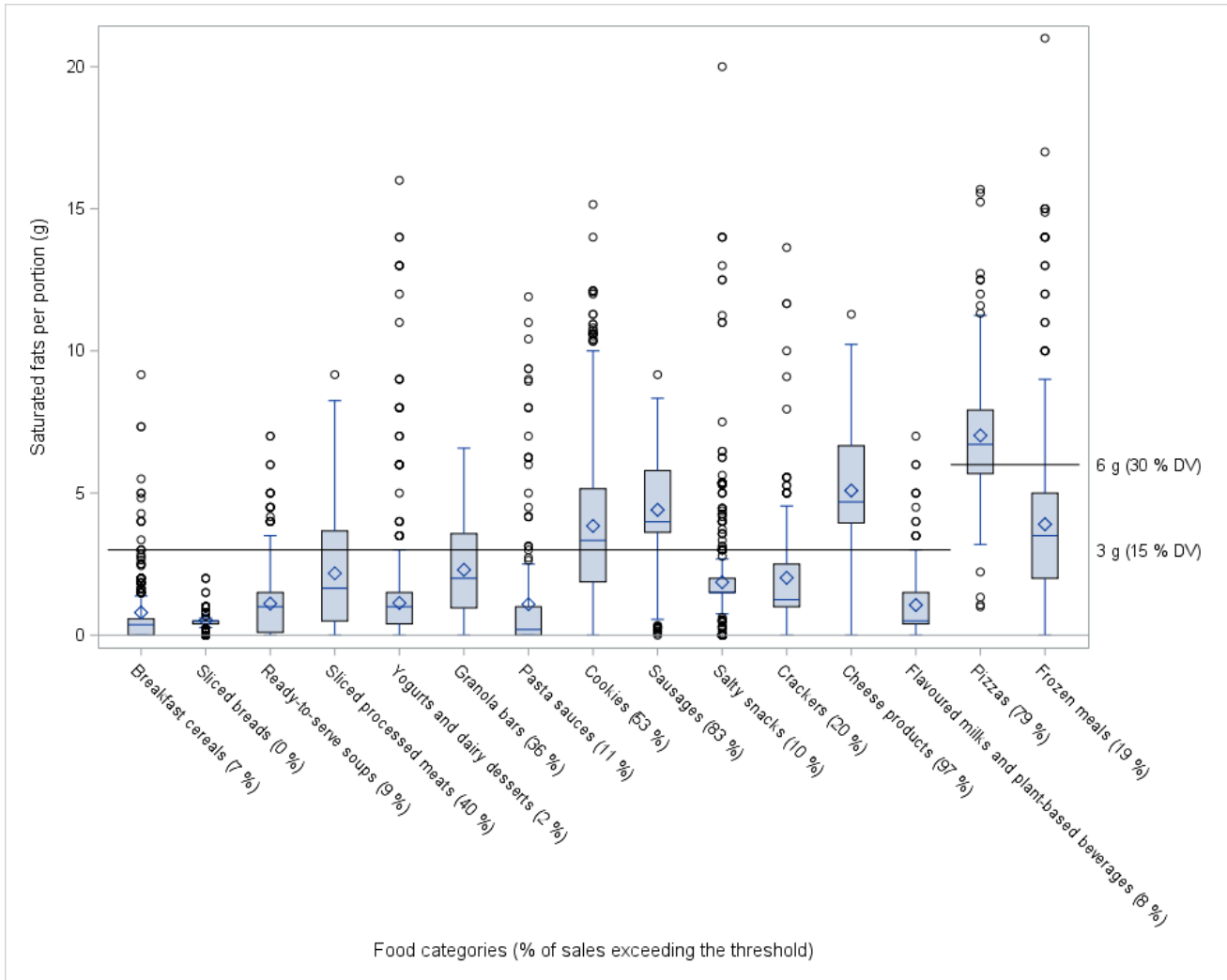


Figure 3. Saturated fat content (weighted for sales) for various categories of food, per serving

More specifically, this Figure indicates that the average of cookies, sausages and cheese products exceeds the 15% DV threshold for saturated fats. The average pizza also exceeds the DV threshold, which, in their case, is 30% for saturated fat. In addition, there is great variability (the distribution of the circles) in the saturated fat contents of yogurts and dairy desserts, pasta sauces, salty snacks, crackers and frozen meals.

Figure 4 shows the percentage of products purchased exceeding the 15% or 30% DV threshold for saturated fats (indicated to the right of each blue band). It also illustrates the impact of theoretical product improvement for relevant food categories (n=10). Food categories for which less than 10% of products exceeded the threshold (breakfast cereals, sliced breads, ready-to-serve soups, yogurts and dairy desserts, and flavoured milks and plant-based beverages) are not presented.

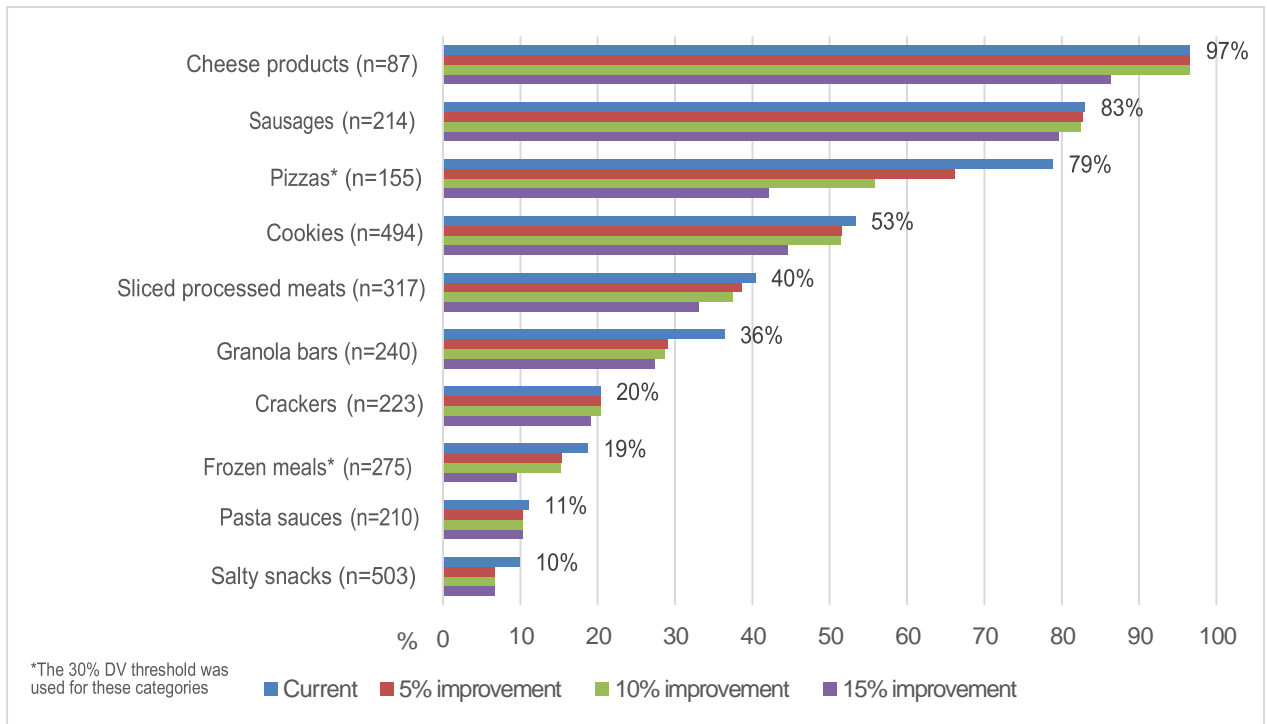


Figure 4. Proportion of products purchased exceeding the 15% or 30% DV threshold for saturated fat per serving and simulations of improvement of 5, 10 and 15% for this nutrient

As illustrated in Figure 4:

- **Cheese products** most often exceed the 15% DV threshold for saturated fats, as more than 95% of the products purchased surpassed this threshold. However, their improvement is limited since the Food and Drug Regulations require cheese products to have a minimum of 20% to 24% fat in their product (6 to 7.2g per 30g of cheese product – current average of 5.7 g)⁴¹. Note that some products that were included in this food category are not subject to this regulation (e.g., plant-based imitations), which may explain the lower average. Fats from milk are mostly saturated, which explains why it is difficult for cheese products to fall below the threshold of 3g of saturated fat per reference quantity.
- Similarly, reducing the saturated fat content in **sausages** may be difficult, considering that they are often made from meats naturally high in saturated fat. Thus, a theoretical improvement of 15% in saturated fat content would only slightly reduce the proportion of sausages purchased exceeding the 15% DV threshold (from 83% to 80%).
- With regard to **pizzas**, a theoretical improvement of only 5%^v in their saturated fat content would lead to a significant improvement, with products purchased that exceed the 30% DV threshold dropping from 79% to 66%.

^vAs a reminder, the 5% theoretical improvement was chosen since it is the highest indicator among the three percentages of effort (see Section 4.4).

- A theoretical 15% reduction in the saturated fat content of **cookies** would reduce the proportion of products purchased exceeding the 15% DV threshold (44% rather than 53%).
- A theoretical 15% decrease in saturated fat content in **sliced processed meats** could be feasible in certain types of meat (e.g., coarsely ground and finely ground meats, which together account for nearly 40% of category sales) and would lead to a significant reduction in the proportion of products purchased exceeding the threshold (33% rather than 40%).
- Lastly, a theoretical reduction of only 5% in the saturated fat content of **granola bars** would significantly reduce the proportion of products purchased exceeding the 15% threshold from 36% to 27%.

The following figure (Figure 5) presents the average and median of the weighted for sales **sugar** content for the different food categories as well as the proportion of products exceeding the 15% and 30% DV thresholds for this nutrient. It should be noted that, overall, 16% of products purchased exceeded the threshold for sugars (data not presented).

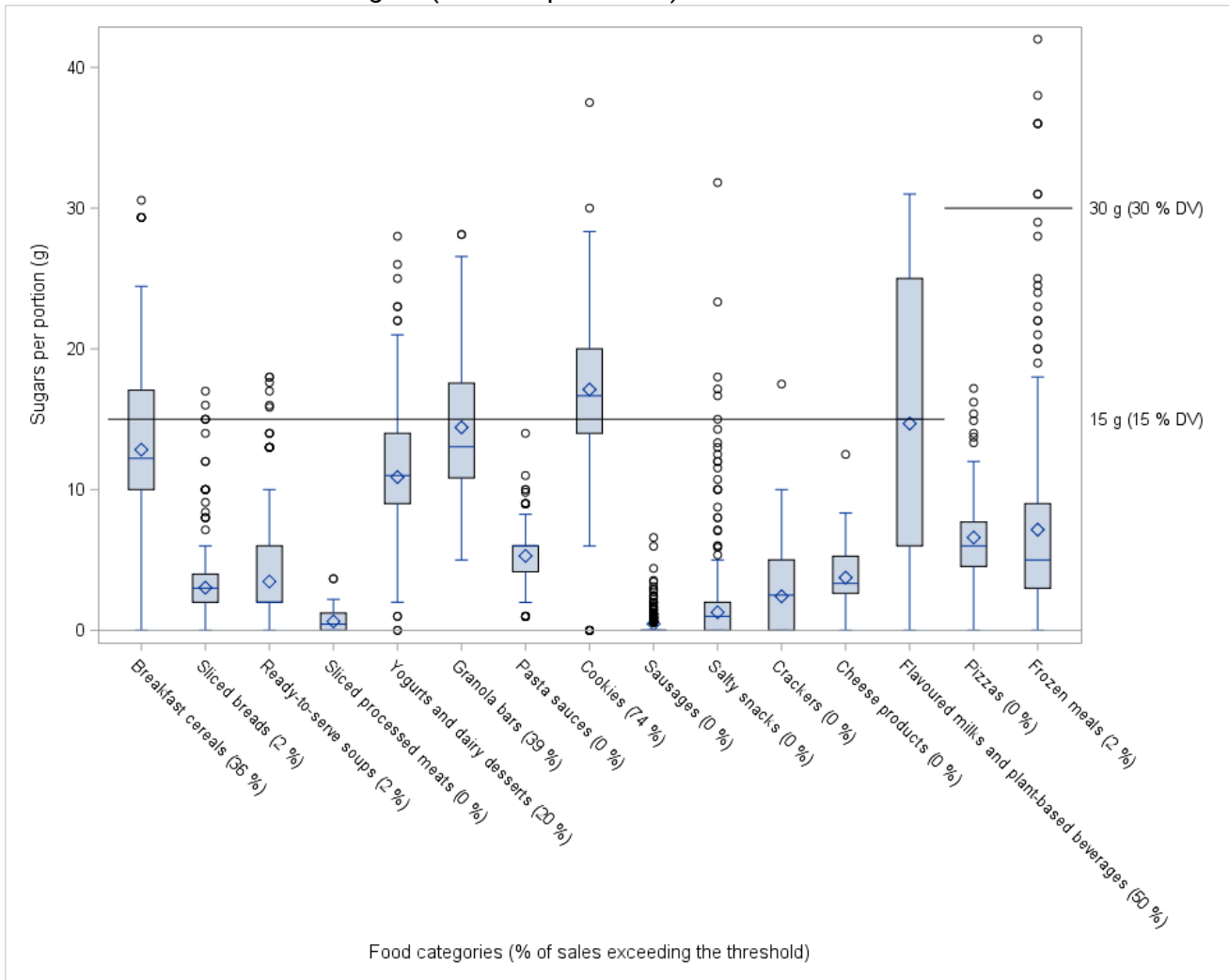


Figure 5. Sugar content (weighted for sales) for different food categories, per serving

More specifically, this figure indicates that the average of cookies and galettes exceeds the 15%

DV threshold for sugars. In addition, many flavoured milks and plant-based beverages as well as granola bars exceed this threshold. Furthermore, the sugar content in sliced breads, yogurts and dairy desserts, salty snacks and frozen meals varies greatly from one product to another.

Figure 6 presents the proportion of products purchased exceeding the 15% DV threshold for sugars in the relevant food categories (n=5) for this nutrient and the improvement simulations. Food categories for which less than 10% of products exceeded this threshold (sliced breads, ready-to-serve soups, sliced processed meats, pasta sauces, sausages, salty snacks, crackers, cheese products, pizzas and frozen meals) are not presented.

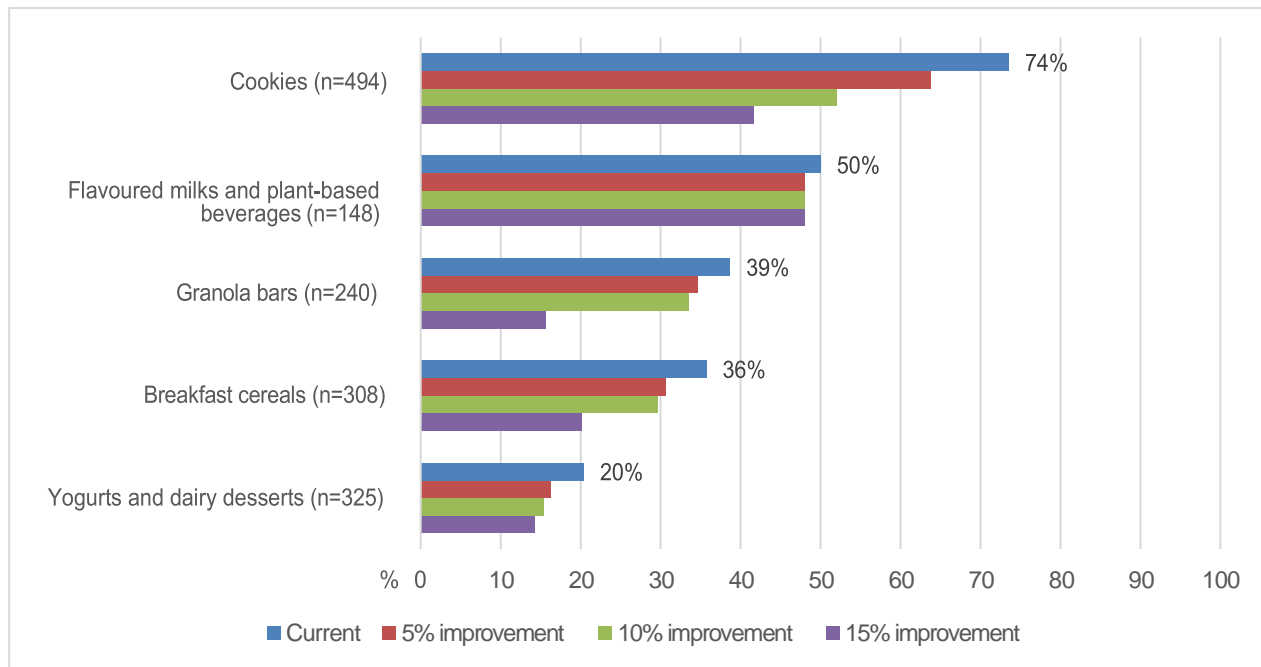


Figure 6. Proportion of products purchased exceeding the 15% DV threshold for sugars by portion, and 5%, 10% or 15% improvement simulations for this nutrient

As indicated in Figure 6:

- The **cookies** category is the one that most often exceeds the threshold for sugars. A theoretical reduction of 10% in sugar content would significantly reduce the proportion of cookies purchased exceeding the threshold (from 74% to 52%).
- As for **flavoured milks and plant-based beverages**, a theoretical reduction of 5%, 10% or 15% in sugar content would have similar impacts (50% to 48%) on the proportion of products purchased exceeding the 15% DV threshold. Thus, a 5% reduction could be considered.

- A theoretical 15% reduction in the sugar content of **granola bars** (from 39% to 16%) and **breakfast cereals** (from 36% to 20%) would significantly reduce the proportion of products purchased exceeding the 15% DV threshold.
- Finally, a theoretical 5% reduction in sugar content in **yogurts and dairy desserts** would slightly reduce the proportion of products purchased exceeding the threshold (from 20% to 16%).

Figure 7 illustrates the average and median of the weighted for sales **sodium** content for the different food categories and the 15% and 30% DV thresholds for this nutrient. It should be noted that, overall, 48% of products purchased exceeded the threshold for sodium (data not presented).

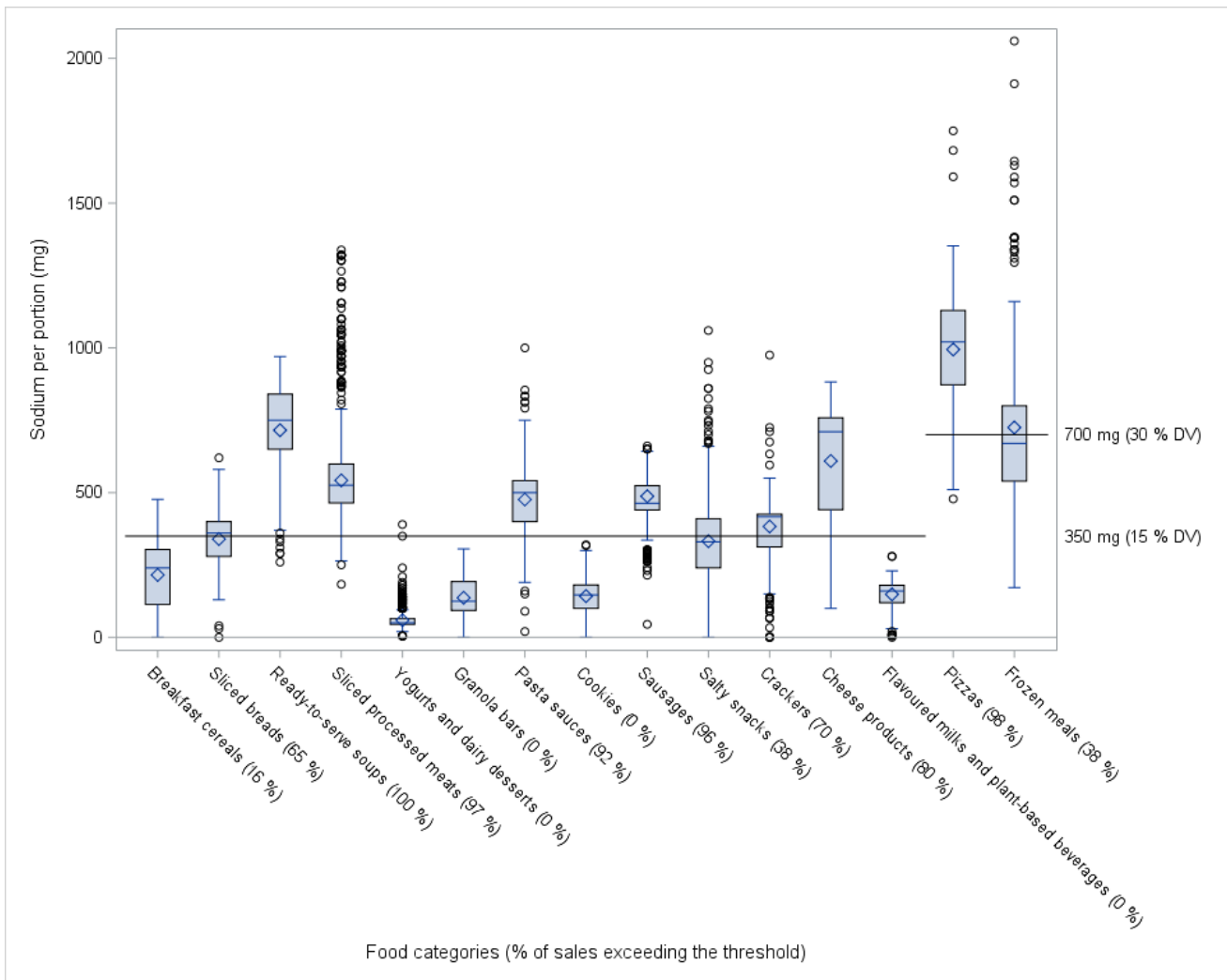


Figure 7. Sodium content (weighted for sales) for different food categories, per serving

The figure above indicates that the average for ready-to-serve soups, sliced processed meats, pasta sauces, sausages, crackers and cheese products exceed the 15% DV threshold for sodium. On average, pizzas and frozen meals also exceed the 30% DV threshold for sodium. There is also a significant variability in sodium levels for sliced processed meats, salty snacks, crackers and frozen meals. Note that granola bars, cookies, and flavoured milks and plant-based beverages have no

product exceeding the 15% DV threshold for sodium. As for yogurts and dairy desserts, only one product exceeds this threshold.

Figure 8 illustrates the proportion of products purchased exceeding the 15% or 30% DV thresholds for sodium, as well as the impact of improvement simulations on compliance with the threshold for the relevant food categories (n=11) for this nutrient. Food categories for which less than 10% of products exceeded the threshold (yogurts and dairy desserts, granola bars, and cookies as well as flavoured milks and plant-based beverages) are not presented.

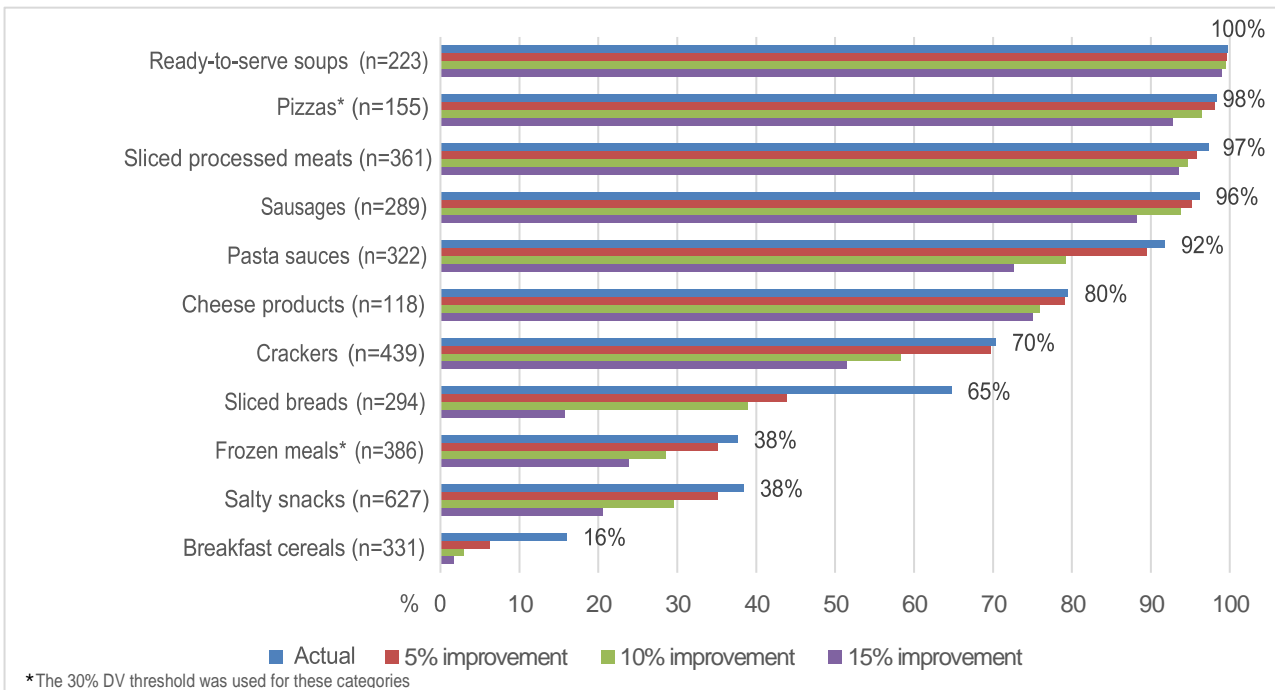


Figure 8. Proportion of products purchased exceeding the 15% or 30% DV threshold for sodium per serving, and 5%, 10% or 15% improvement simulations for this nutrient

As shown in Figure 8:

- A theoretical 15% reduction in the sodium content of **sausages** would result in a smaller proportion of products purchased exceeding the 15% DV threshold (88% rather than 96%).
- A theoretical 10% reduction in the sodium content of **pasta sauces** would also result in a significant reduction in the proportion of products purchased exceeding the 15% DV threshold (79% rather than 92%).
- A theoretical 15% drop in the sodium content of **crackers** would result in an important decrease in the proportion of products purchased exceeding the 15% DV threshold from 70% to 51%.

- With regard to **sliced bread**, a theoretical reduction of 5% would reduce the proportion of products purchased exceeding the threshold of 15% DV by more than 20%.
- Lastly, a theoretical 5% decrease in the sodium content of **breakfast cereals** would leave only 6% of purchased products still exceeding the 15% DV threshold.

Note that for the sliced processed meat and sausage categories, a minimum amount of sodium must be retained for food safety and texture reasons. However, considering the great variability observed in sodium levels (see Figure 7), it is still possible to reduce current sodium levels while remaining safe for consumption. In addition, a reduction in sodium would not affect proper preservation for most other food categories.

Considering that the voluntary sodium reduction targets determined by Health Canada are adapted to the food matrix (i.e., specific to each food category), the analyses were repeated with the targets published in 2012. The results are presented in the Appendix (see Table 6). Unlike the 15% or 30% DV thresholds, these targets are intended for the food industry to reduce sodium levels in processed foods and ultimately reduce the Canadian population's average sodium intake. The results presented in Table 6 show that pizzas, cheese products, salty snacks and sliced breads are the categories that most often exceed their target. A theoretical reduction of 15% in the sodium content of sliced breads would result in a lower proportion of products exceeding the target (from 87% to 77%). Also, a theoretical reduction of 5% would be greatly advantageous to help a smaller proportion of sausages and ready-to-serve soups to exceed their target (from 67% to 29% and from 79% to 60%, respectively).

Figure 9 presents the mean and median of weighted for sales **fibre** content for the different food categories as well as the 15% DV threshold for this nutrient. Overall, 83% of products purchased do not meet the 15% DV threshold for fibre (data not shown).

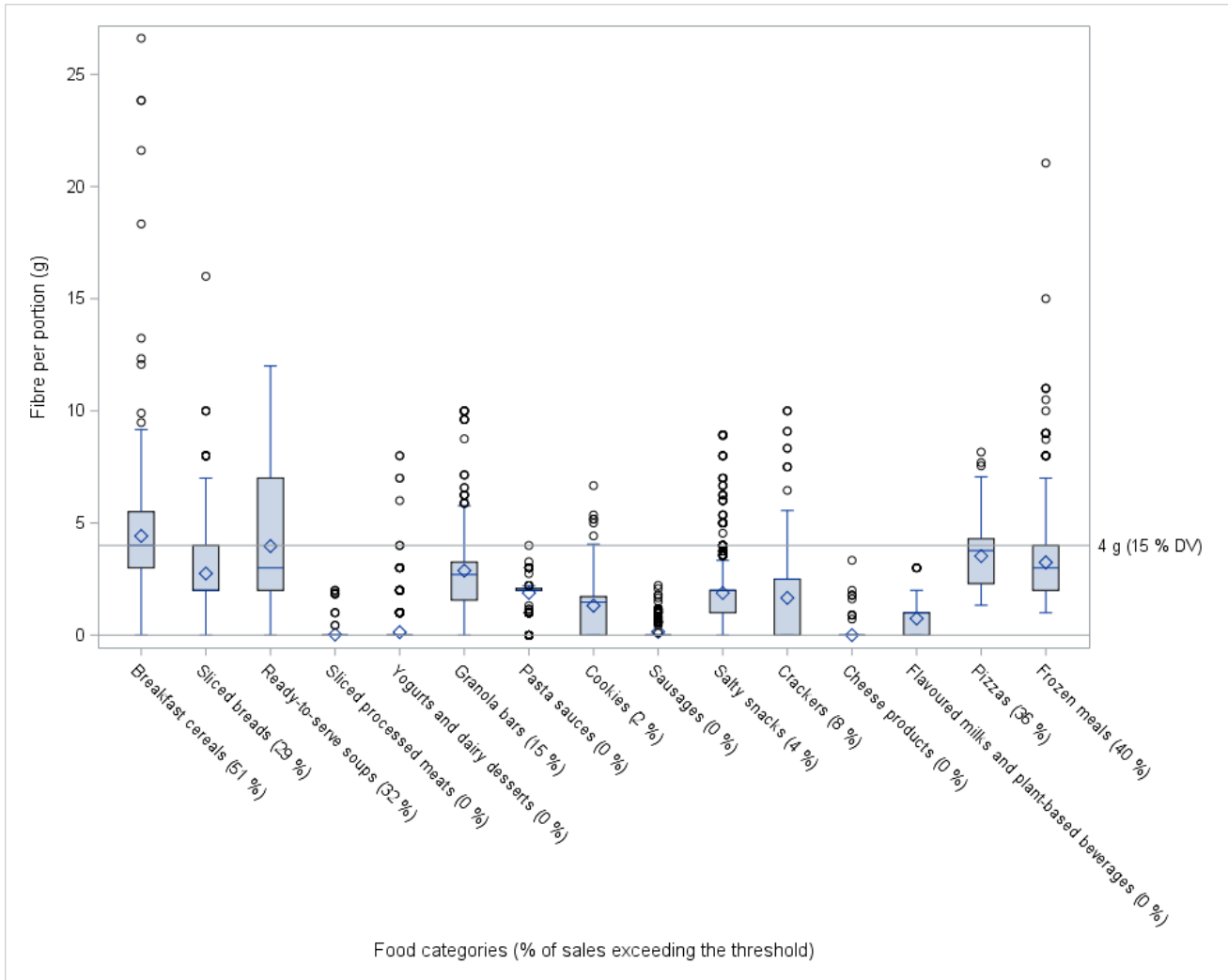


Figure 9. Fibre content (weighted for sales) for the different food categories, per serving

In addition to breakfast cereals and ready-to-serve soups, the figure shows that the average fibre content of all categories studied is below the 15% DV threshold per serving. Furthermore, a large proportion of cookies (76%) and crackers (45%) do not reach 2g of fibre per serving (which is equivalent to approximately 7.5% of the DV) considered to be a “source of fibre” (data not shown). There is great variability (the distribution of the circles) in the fibre content of breakfast cereals, salty snacks and frozen meals. Considering the nature of these products, it was expected that the average fibre content of sliced processed meats, yogurts, dairy desserts, sausages and cheese products would be practically zero.

Figure 10 illustrates the proportion of purchased products meeting the 15% DV threshold for fibre per serving for the relevant food categories (n=9) for this nutrient as well as the impact of the improvement simulations on reaching this threshold. Food categories for which no product meets the 15% DV threshold have not been presented in this Figure (sliced processed meats, pasta sauces, yogurts and dairy desserts, sausages, cheese products, and flavoured milks and plant-based beverages).

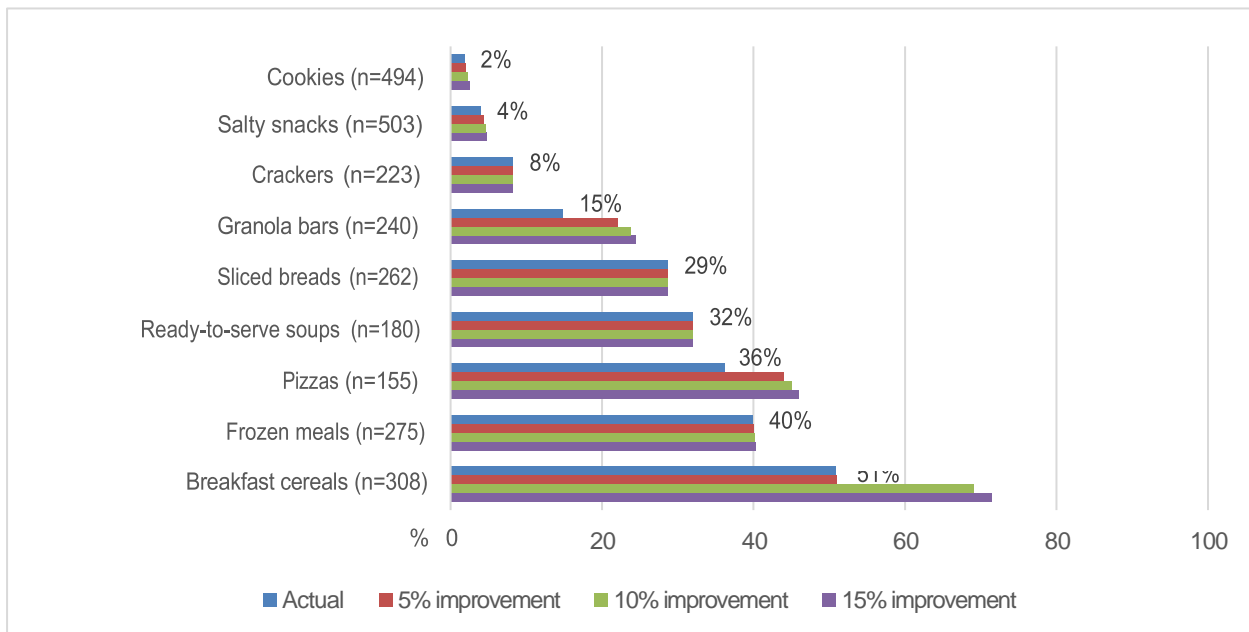


Figure 10. Proportion of products meeting the 15% or more DV threshold for fibre by portion, and 5%, 10% or 15% improvement simulations for this nutrient

Figure 10 shows that:

- A theoretical increase of only 5% in the fibre content of **granola bars** would generate an increase in the proportion of products purchased reaching the 15% DV threshold per serving, from 15% to 22% of products.
- Similarly, a theoretical 5% increase in fibre in **pizzas** would be realistic and would ensure that 44% of products purchased reached the threshold rather than 36%.
- As for **breakfast cereals**, a theoretical increase of 10% in fibre content would ensure that 69% of products purchased reached the 15% DV threshold rather than 51%.
- It should be noted that an increase of up to 15% in **sliced breads** is not sufficient to improve the reach of the 15% DV threshold.

5.4 Health Canada front-of-package nutrition symbol (Objective 2)

Due to regulations regarding front-of-package nutrition labelling, which came into force in July 2022, the packaging for products meeting or exceeding the Health Canada-established thresholds for saturated fats, sugars and sodium must display a symbol indicating high levels of these nutrients. For regulatory reasons (e.g. a different threshold depending on the reference quantity or exemption for certain products), the percentages of products that bear the symbol are not quite the same as the percentages of products exceeding the 15% or 30% DV thresholds presented in this report (see section 4.4 for methodological details)³⁷. Using weighted for sales data, Figure 11 shows the proportion of products with the front-of-package symbol for saturated fats, Figure 12 for sugars and Figure 13 for sodium.

In short, 60% of all the products under study (sales-weighted data), which, unless there was a change in their current formulation, would have the symbol for at least one nutrient (data not presented). More specifically, 46% of products display the symbol for one nutrient, 13% display it for two nutrients, and less than 1% display it for all three nutrients. Moreover, the majority of pizzas (95%), sausages (85%) and cookies (50%) have the nutritional symbol for two nutrients.

Figure 11 shows that 17% of all products sold display the symbol on the front of the package for saturated fat.

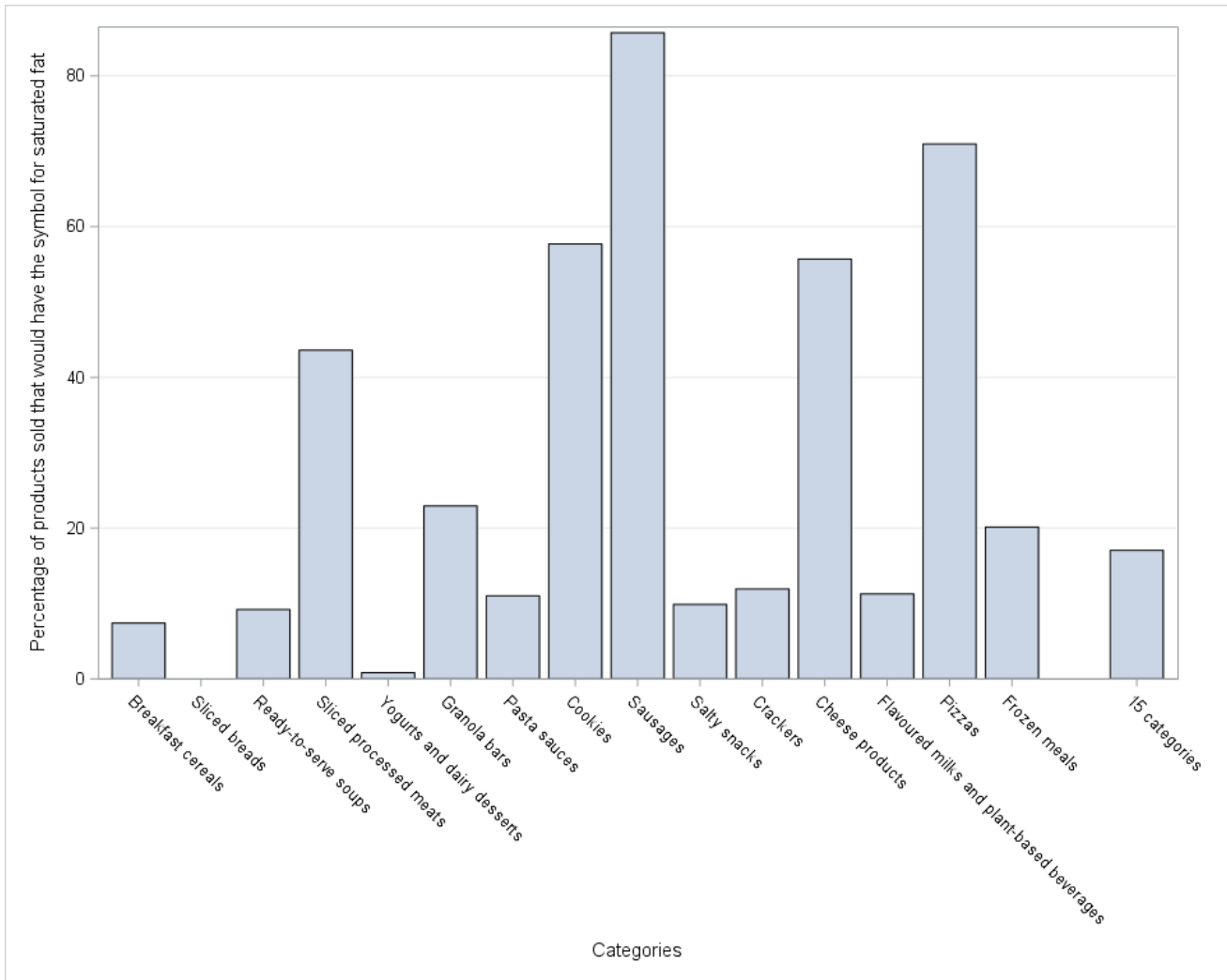


Figure 11. Proportion of products (weighted for sales data) that feature the front-of-package nutrition symbol for saturated fat for the 15 food categories

Sausages (86%), pizzas (71%), cookies (58%), cheese products (56%) and sliced processed meats (44%) would have the largest proportion of products sold with the symbol for that nutrient.

Figure 12 shows that 17% of all products sold would display the front-of-package symbol for sugars.

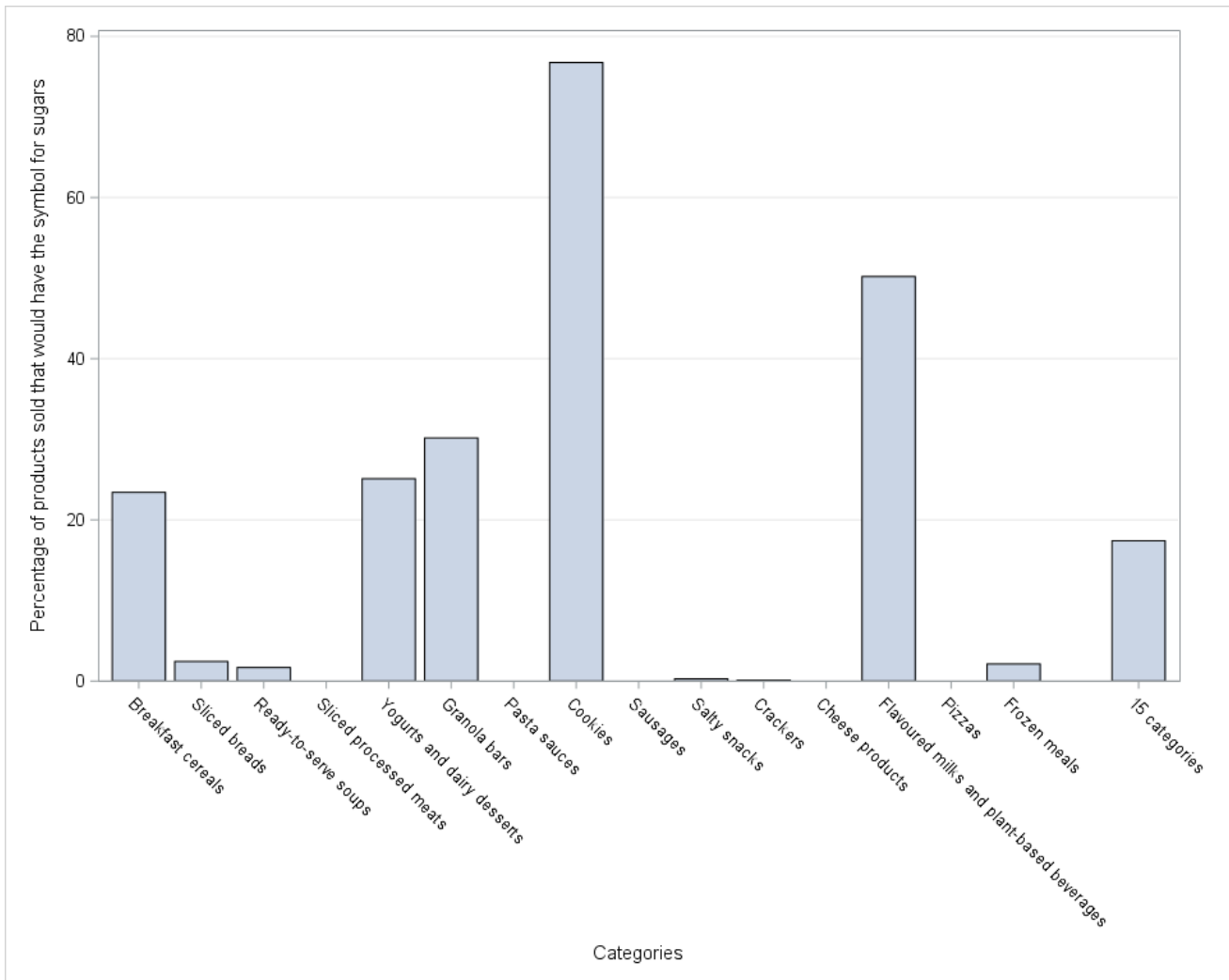


Figure 12. Proportion of products (weighted for sales data) that would display the front-of-package nutrition symbol for sugars for the 15 food categories

Cookies (77%), flavoured milks and plant-based beverages (50%) and granola bars (30%) have the largest proportion of products sold displaying the front-of-package symbol for this nutrient.

Figure 13 shows that 40% of all products sold have the front-of-package symbol for sodium.

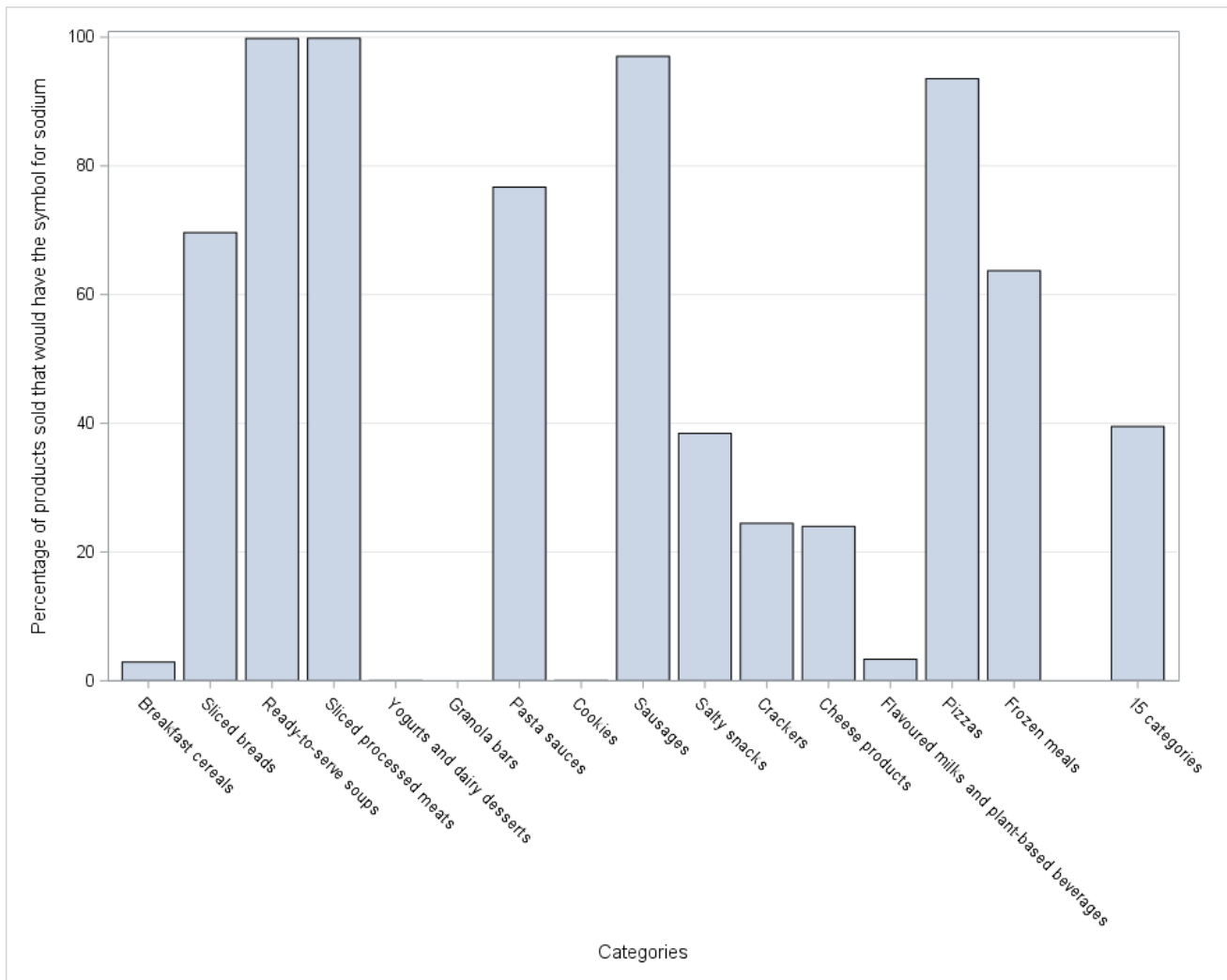


Figure 13. Proportion of products (weighted for sales) that would display the front-of-package nutrition symbol for sodium for the 15 food categories

More than half of the products in seven of the 15 categories studied have the symbol for this nutrient. More specifically, this is all (100%) of ready-to-serve soups and sliced processed meats as well as 97% of sausages, 94% of pizzas, 77% of pasta sauces, 70% of sliced breads and 64% of frozen meals that display the front-of-package symbol for sodium.

5.5 Nutrient contribution (Objective 4)

The nutrient contributions of the different food categories were estimated according to their respective sales and are presented in Table 3. This sales data was therefore used as an approximation of food consumption. Overall, this table shows that the 15 food categories studied in this report provide 11% of daily saturated fat intake, 12% of sugar intake, 16% of sodium intake and 9% of fibre intake (see Section 4.4 for the calculation). The application of the different theoretical improvements proposed in section 5.3 for each food category would result in a daily reduction of 0.18 g in saturated fat, 0.79 g in sugars, 54 mg in sodium and an increase of 0.21 g in fibre (see Table 7 in the Appendix for details on the specific theoretical improvements for each food category). This represents a reduction of 65.7 g in saturated fat, 288 g in sugars, 19,710 mg in sodium and an increase of 77 g in fibre consumed by Québécois per year. With these modifications,

all food categories studied would instead represent 10% of daily saturated fat intake, 11% of sugar intake, 15% of sodium intake and 10% of fibre intake.

Furthermore, the following Table 3 reveals that, among the 15 food categories studied, breakfast cereals, sliced breads, cookies, salty snacks and cheese products are the food categories contributing the most to purchases of saturated fats, sugars and/or sodium by the Québec population. More precisely, among the categories studied:

- Cookies represent 19% of **saturated fat** purchases, followed by cheese products (18%) and salty snacks (13%).
- Sliced breads represent 24% of **sugar** purchases, followed by cookies (20%) as well as breakfast cereals (18%).
- Sliced breads represent 27% of **sodium** purchases, followed by salty snacks (14%) and cheese products (12%).

These five food categories should, therefore, be improved as a priority.

Although they have the potential, crackers (3%), granola bars (6%) as well as cookies (6%) contribute very little to **fibre** intake. Since these three food categories are grain products, it would have been expected that they contribute more significantly to fibre intake whereas they have very low fibre contents.

Table 3. Annual nutrient contribution per Québécois for the 15 food categories studied

	Energy (kcal)	Fats (g)	Saturated Fats (g)	Carbohydrates (g)	Fibre (g)	Sugars (g)	Proteins (g)	Sodium (mg)
Breakfast cereals	12775	161	49	2690	270	778*	281	13060
Sliced breads	26741	322	67	5044	383	1022	410	46888
Pizzas	3254	131	51	383	23	46	138	7417
Ready-to-serve soups	870	24	7	127	26	23	35	4770
Sliced processed meats	2366	148	52	45	N/A	N/A	207	12899
Yogurts and dairy desserts	4629	99	57	698	7	553	221	3123
Frozen meals	912	28	10	122	9	19	44	1919
Granola bars	4189	150	46	667	58	289	73	2738
Pasta sauces	1062	44	16	137	27	76	36	6881
Cookies	11376	461	189	1702	65	843	127	7020
Sausages	3658	288	100	81	3	11	189	11315
Salty snacks	18553	1041	132	2086	133	90	227	23507
Crackers	4344	164	38	638	31	45	81	7206
Cheese products	4484	304	179	219	N/A	132	221	21490
Flavoured milks and plant-based beverages	2708	74	23	399	16	325	116	3286
TOTAL ANNUAL CONTRIBUTION	101907	3438	1016	15037	1052	4248	2407	173500
TOTAL DAILY CONTRIBUTION	279.20	9.42	2.78	41.20	2.88	11.64	6.59	475.34
ESTIMATED DAILY INTAKE	2000 kcal	61g according to AMDRs ⁴²	25 g according to INSPQ ³	275 g according to AMDRs ⁴²	32 g according to AMDRs ⁴²	100 g according to AMDRs ³	60 g according to: 75 kg x 0,8 ⁴³	2901 mg according to INSPQ ³
% of daily intake	14.0	15.4	11.1	15.0	9.0	11.6	11.0	16.4
% of the intake of processed foods**	28.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
% of daily intake with Improvements***			10.4			10.8		14.5
Daily difference after proposed enhancements***			-0.18 g			-0.79 g		-54 mg

*Values in bold represent the three food categories that contribute the most to purchases of this particular nutrient.

**Data from the 2015 CCHS, analyzed according to the degree of processing of foods consumed by Québécois aged 2 and over, reveal that almost half (48.9%) of the daily energy intake came from ultra-processed foods³⁹.




***The proposed changes for all food categories are available in Table 7 in the Appendix.

AMDRs: Acceptable Macronutrient Distribution Ranges ; INSPQ: Institut national de santé publique du Québec

5.6 Synthesis of nutrients to be improved (Objective 5)

A summary table (Table 4) was generated to illustrate all the results obtained. This suggests priorities for improvement relating to food categories that contribute the most to purchases of saturated fat, sugars, and/or sodium, with theoretical improvement percentages (5%, 10%, or 15%) specific to each nutrient. Fibre was not presented in the table since it is a nutrient to be encouraged that is not linked to nutritional symbol requirements implemented by Health Canada, and the methodology used to determine its improvements would have been different. As a reminder, these improvement priorities relating to the 15 food categories studied were determined by taking into account the high content of the products in a given nutrient, the population nutritional contribution of the category as well as the extent of the impact of a reformulation^{vi}. Therefore, these improvement priorities aim to: 1) Reduce the proportion of products with a high content of a nutrient to be limited and 2) Improve the population's health. The highest indicator (see Section 4.4.) helped to determine the proposed improvement. The proposed improvement is first presented as a percentage (5%, 10% or 15%), then what this reduction represents in grams or milligrams of this nutrient per serving. This approach therefore makes it possible to identify, among the 15 food categories studied, the most urgent changes to undertake and which would have the potential to generate the greatest impact by improving the dietary intake of the Québec population.

Table 4. Categories of food to be improved as a priority, and the extent of theoretical improvement for the three nutrients to be limited

	Saturated Fats		Sugars		Sodium	
	Food Categories	Proposed Improvement	Food Categories	Proposed Improvement	Food Categories	Proposed Improvement
Priority 1 	Cookies	↓ 15% (0.3 g)	Breakfast cereals	↓ 15% (1.9 g)	Sliced breads	↓ 5% (17 mg)
					Salty snacks	↓ 15% (50 mg)
	Cheese products	↓ 5% (0.2 g)	Cookies	↓ 10% (1.0 g)	Cheese products	↓ 10% (37 mg)
Priority 2 	Sausages	↓ 15% (0.6 g)	Yogurts and dairy desserts	↓ 5% (0.5 g)	Breakfast cereals	↓ 5% (11 mg)
			Flavoured milks and plant-based beverages	↓ 5% (0.7g)	Sliced processed meats	↓ 5% (27 mg)
Priority 3 	Pizzas	↓ 5% (0.4 g)	Granola bars	↓ 15% (1.5 g)	Sausages	↓ 15% (72 mg)

^{vi}For example, although the sliced bread category constitutes the leading contributor in sugars among the 15 food categories studied, it was not considered a priority for improvement for this nutrient since only a small proportion of sliced bread exceeds the 15% DV threshold for sugars.

Table 4 shows that the first priority for improvement should target cookies (saturated fats and sugars), cheese products (saturated fats and sodium), breakfast cereals (sugars) as well as sliced breads and salty snacks (sodium). This means that the extent of the proposed improvement for these food categories would significantly reduce the number of products exceeding the 15% DV threshold while having a considerable impact on the intake of the Québec population.

The second priority for improvement is sausages (saturated fats), yogurts and dairy desserts (sugars), flavoured milks and plant-based beverages (sugars), breakfast cereals (sodium) and sliced processed meats (sodium).

Lastly, pizzas (saturated fats), granola bars (sugars) and sausages (sodium) are found as a third improvement priority for these three particular nutrients.

It should be noted that the same prioritization logic was not used for fibre since an increase in this nutrient does not apply to certain food categories. In addition, it is a nutrient to be encouraged and is not linked to the nutritional symbol requirements implemented by Health Canada. However, due to their large contribution to fibre purchases, a 10% increase in fibre in breakfast cereals (+0.4 g) and a 5% increase in sliced breads (+0.1 g) would be considered a first priority. In addition, a 5% increase in fibre content in granola bars (+0.1 g) could be considered a second priority since this would contribute to a significant increase in the proportion of products reaching the 15% DV threshold. Lastly, as a third priority, a 15% increase in fibre content in cookies (+0.1 g) should be considered since it is the fourth largest fibre contributor among the 15 categories studied.

Discussion

This report's main objective was to summarize the nutritional composition of 15 food categories found in grocery stores between 2016 and 2022. These food categories involved more than 5000 products for which the sales data represents a market coverage of an average of 79%.

Regarding the **nutritional composition** of the 15 food categories evaluated, the highest average saturated fat content is found in cheese products (11.7 g/100 g), while the average highest sugar and sodium content is found in cookies (32 g/100 g) and sliced processed meats (1,121 mg/100 g), respectively.

In New Zealand, among nine of the 15 categories studied in this report, cereal and nut bars had the highest average content of saturated fats and sugars (6.3 g and 27 g per 100 g, respectively)²³. For their part, cookies recorded in New Zealand had an average sugar content of 20 g/100 g, the second category with the highest sugar content. Concerning sodium, just like in the present study, it was processed meats which had the highest average content for this nutrient (795 mg/100 g)²³. Elsewhere in Canada, researchers analyzed more than 52 food categories¹⁵. Among these, 13 of their categories corresponded to those studied in this report. Cheese products then had the highest average sodium content (1,471 mg / 100 g), followed by sliced processed meats (1,092 mg / 100 g)¹⁵. These results show that the nutrient-rich food categories of interest are similar elsewhere in Canada and worldwide. They also show the variability of nutrient contents and the importance of continuing to encourage manufacturers to continue their efforts to improve the nutritional quality of the food supply.

The highest average saturated fat content is found in cheese products, while the highest average sugar and sodium content is found in cookies, and sliced processed meats, respectively.

Considering the **compliance with the 15% or 30% DV thresholds** in saturated fats, sugars and sodium, as well as the 15% DV threshold in fibre, 11% of the products currently offered simultaneously respect the thresholds for these four nutrients compared to 7% when weighted for sales. This calculation can be used to globally monitor the nutritional quality of these 15 food categories, thus making it possible to evaluate the products as a whole rather than focusing on a single nutrient at a time. It should be noted that sodium is the most problematic nutrient since almost half of the products purchased exceed the DV threshold.

It was also possible to assess the number of products that would have the **front-of-Food quality Observatory**

package symbol, meaning a high content of saturated fat, sugars and/or sodium. In short, 60% of products purchased display the symbol for at least one nutrient. According to the FLIP study carried out in Ontario, 66% of products offered in 2017 would have had the symbol for at least one nutrient¹⁸. In comparison, 59% of the products offered and analyzed by the Observatory display the symbol for at least one nutrient (data not presented). The comparison between the Observatory and FLIP data is still limited since the data from the Ontario study covers more food categories. The analyses carried out in this report revealed that for several food categories, the products' nutritional composition differed from that of the products purchased (data not shown). This underlines the importance of paying more attention to purchases since they better represent what the population consumes. For example, among the food categories studied by the Observatory, 37% of the products offered have the front-of-package symbol for sodium but represent 40% of the products sold. Consequently, focusing on improving the nutritional value of the best-selling products will have a greater impact on the quality of Québecers' diets. According to the same Ontario study, 32% of the foods offered displayed the nutritional symbol for sodium, 28% for sugars and 28% for saturated fats, while it was 40%, 17% and 17%, respectively for products purchased in Québec.

In Québec, among the products analyzed by the Observatory, 60% display the nutritional symbol for at least one nutrient.

Differences in research methodology may explain the differences in proportions obtained between the FLIP study in Ontario and that of the Observatory in Québec. In fact, the Observatory 1) used purchase data rather than supply data, 2) selected only food categories with potential for improvement rather than analyzing all categories of processed foods and 3) carried out data collection by visiting a wide variety of grocery stores until saturation was reached, while FLIP carried out collections in the three largest chains. The nutritional symbol that would be found on the front of the packaging of 60% of processed foods purchased and analyzed by the Observatory could encourage manufacturers to improve the nutritional quality of their products in order to avoid displaying the symbol. For comparison, in Chile, following the affixing of a warning symbol on products with high sugar and energy contents, a reformulation of products has been observed⁴⁴. In fact, manufacturers tended to reformulate products just below the threshold to avoid having the symbol on the product packaging. In fact, it has been shown that consumers have a lower health perception of products that bear the symbol as well as a reduced purchasing intention towards these products⁴⁵⁻⁴⁷. Therefore, it will be advantageous for the industry to reduce the saturated fats, sugars, and/or sodium content of their products in order to avoid having the symbol displayed on the front of the package. Furthermore, Canadian researchers have shown that the front-of-package nutritional symbol will have the potential to reduce sodium intake (-73 to -259 mg per day) and sugars (-2.0 to -6.9 g per day) of

Breakfast cereals, sliced breads, cookies, salty snacks and cheese products are the food categories contributing most to purchases of nutrients that should be limited.

Canadians⁴⁸. This could, therefore, help to avoid or delay thousands of deaths linked to non-communicable diseases.

It is estimated that the 15 food categories studied provide respectively 11.1%, 11.6% and 16.4% of Québécois' daily intake of saturated fats, sugars and sodium (see Section 5.4 – Table 3). Among the 15 categories studied, breakfast cereals, sliced breads, cookies, salty snacks and cheese products are the five food categories contributing the most to purchases of these nutrients. In addition, these categories contain, for the most part, a large proportion of their products exceeding the 15% DV threshold for saturated fats, sugars and/or sodium. This is why these categories were identified as the first priority for improvement (see section 5.5 – table 4 for the specific priorities for each nutrient). Since they contribute significantly to the intake of nutrients of interest, improving the nutritional quality of these food categories could have a strong potential impact on dietary intake and, ultimately, on the population's health. This calculation, however, includes certain boundaries. First, the calculation takes into account 15 categories of processed foods and not all categories of processed foods consumed by Québécois. In addition, several categories of foods very rich in sugars, such as soft drinks, fruit juices and candies were not included in the Observatory's collection since they did not meet one or more selection criteria. (e.g., low potential for improvement). Thus, certain categories of foods studied, such as sliced breads, can represent very large contributors of sugars, whereas their contribution would have been less if all categories of typically sweet foods had been included in the study.

Improvement simulations were carried out in this report in order to propose and quantify the extent of the improvements that would need to be undertaken for each food category. It was then noted that theoretical improvements for the applicable nutrients at a rate of 5%, 10% or 15% would have a significant impact on the nutritional quality of food purchases by Québécois. Overall, the proposed improvement simulations would make it possible to reduce Québécois' annual intakes by 65.7 g in saturated fats, 288 g in sugars and 19,710 mg in sodium. Reductions of these magnitudes have demonstrated benefits on the population's health and quality of life in various studies⁴⁹. Such improvements would thus help to reduce the 15 food categories' daily intake to 10% for saturated fats, 11% for sugars and 15% for sodium. This would, therefore, make it possible to reduce these food categories' contributions to the daily intake of saturated fats, sugars and sodium (data not shown) by 0.7%, 0.8% and 1.9%, respectively. In light of the literature review that was previously carried out, no other study has attempted to apply this type of specific improvement simulation within various food categories.

There are many **obstacles linked to improving the nutritional composition** of products, both in reformulating existing products and in developing new, healthier products. First of all, there are numerous technological challenges, particularly with regard to reducing sodium levels. In fact, in addition to being a flavour enhancer, sodium also helps increase products' shelf lives (e.g., sliced processed meats, sausages) and plays a role in the colouring and texture of products (e.g. sliced breads and cookies). Despite these challenges, the variability of sodium contents within the same food category demonstrates that reduction is possible for several products. Furthermore, in order not to impair the taste of foods, a gradual reduction of between 5% and 15% in saturated fats, sugar and sodium content would be preferred. In fact, consumers would barely perceive

a taste difference if these nutrients were gradually reduced, and they would become accustomed to this new taste profile. If necessary, such an approach, combined with technological innovations, would be key in helping manufacturers improve their products' nutritional composition without affecting their sales. Indeed, the fear of losing sales can often prove to be a major obstacle to change on the part of industries. However, according to the World Health Organization, product reformulation (e.g., through government programs) is considered a cost-effective strategy for reducing sodium levels and is now being considered for reducing sugars and saturated fats⁵⁰.

Furthermore, certain **regulations**, such as requiring a minimum of fat in cheese products, limit the potential for certain products to improve. However, regarding saturated fats, various approaches would make it possible to reduce their content while being consistent with the new dietary recommendations. For example, it is possible to use vegetable oils with a better nutritional composition (e.g., substitute palm oil for canola oil) or fully or partially substitute animal proteins for vegetable proteins. (e.g. in sausages, pizzas, and frozen meals). Meats with a lower saturated fat content could be chosen, lower fat cheeses, or to reduce the quantity of these ingredients to reduce the overall saturated fat content of pizzas and frozen meals, for example. It should be noted that the reformulations proposed in this report must be implemented in collaboration with manufacturers. Moreover, the data in this report could potentially contribute to the establishment of realistic reformulation targets while being beneficial for the population's health.

All of the information obtained as part of this study will help to evaluate the effects of the implementation of the most recent public policies without being able to determine which specific policy will have prompted change. Thus, the Observatory's monitoring studies will contribute to a better understanding of the overall impact of these public policies in relation to consumer purchases without, however, being able to determine which incentives may have led to the observed effects. For example, future studies will make it possible to verify whether the nutritional composition of the offering and purchases has improved, or whether products based on plant proteins are more present on shelves. However, the isolated impact of each policy will be difficult to observe, since other elements could influence the nutritional quality of the products available on the market.

7 Conclusion and perspectives

This report covering the initial overview of 15 food categories found in grocery stores between 2016 and 2022 helped to draw up a summary of the nutritional composition of processed products offered and purchased by consumers in Québec or Canada. In addition, avenues to improve the nutritional composition for the different categories studied are proposed.

First, this report made it possible to identify the food categories most exceeding the 15% DV thresholds for saturated fats, sugars and sodium as well as the food categories least often reaching the DV threshold for fibre. **Cookies** are the food category with the greatest number of products exceeding 15% DV threshold for sugars, **sliced processed meats** for sodium and **cheese products** for saturated fats. As for fibre, **cookies** are the food category whose products least often reach the 15% DV threshold. The report also indicates that, among the food categories analyzed, **breakfast cereals, sliced breads, cookies, salty snacks** as well as **cheese products** would benefit from being reformulated as a priority. In fact, their reformulation (or the marketing of new, more nutritious products) would have a great impact on the nutritional composition of the population's purchases. It is possible to refer to the initial overview reports of each food category to identify possible solutions to improve their nutritional composition⁵¹, on a case-by-case basis. Developing and implementing these solutions must be done in collaboration with manufacturers to ensure maximum impact while respecting the challenges they face. In short, the results obtained by the Observatory could be useful in supporting the industry in its approach to improving its food offerings.

Among the food categories studied, **66% of products sold exceed at least one of the DV thresholds for saturated fats, sugars or sodium**. If the nutritional composition of the products is not revised by January 1, 2026, **60% of products under study (weighted for sales) will display the front-of-package symbol for at least one nutrient**. It will be interesting to see if this symbol will encourage manufacturers to reformulate their products or to market new products with a better nutritional composition. Lastly, the absence of a symbol will also make it easier for consumers to identify products lower in saturated fats, sugars and sodium.

In addition, this report also proposed **improvement simulations** for the 15 food categories

so that a greater proportion of products fall below the 15% DV threshold. The reduction in annual intakes of saturated fats (-65.7 g), sugars (-288 g) and sodium (-19,710 mg) resulting from these improvements could thus contribute to reducing the risk of chronic non-communicable diseases (e.g., cardiovascular diseases, certain types of cancers and type 2 diabetes). Improving the nutritional quality of processed products available on the market should be a public health priority since it can have a direct impact on the population's health.

In the future, the Observatory plans to use a nutritional profiling tool that includes several nutrients or nutritional components. The advantage of such a tool is that it can consider nutrients that should be limited and nutrients that should be encouraged. This tool will help obtain an objective, rigorous and transparent tally of the foods' overall nutritional quality, both for individual food categories and for the 15 food categories studied. The profiling score can also be associated with the sales price and its evolution over time.

Finally, this report will serve as a basis for measuring the evolution of the quality of the food supply and purchases in Québec or Canadian grocery stores. It can also be used as a comparison to changes in the food supply in other countries worldwide. The information obtained as part of this study could be used to develop public policies or evaluate the outcomes of the most recent policies that have been implemented.

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Appendices

Table 5. Nutritional composition and selling price for the different categories offered and sold, per 100 g portion

	Energy (kcal)		Fats (g)		Saturated Fats (g)		Carbohydrates (g)		Fibre (g)		Sugars (g)		Protein (g)		Sodium (mg)		Sales Price (\$)	
	Offer	Purchases	Offer	Purchases	Offer	Purchases	Offer	Purchases	Offer	Purchases	Offer	Purchases	Offer	Purchases	Offer	Purchases	Offer	Purchases
Food Categories																		
Breakfast cereals (n=331 / n=306)*	396±42	382±37	7.2±6.5	4.8±4.6	1.5±2.3	1.4±3.0	75.3±10.1	80.5±6.5	8.5±5.7	8.0±6.8	20.7±10.3	23.3±10.1	9.7±4.0	8.5±3.1	270±212	392±227	1.36±0.63	1.09±0.26
Sliced breads (n=294 / n=262)	259±30	258±19	3.9±2.4	3.1±1.0	0.6±0.4	0.7±0.3	47.9±10.0	48.2±4.9	5.3±2.8	3.7±2.3	3.7±3.7	4.0±3.1	9.6±2.9	9.7±1.6	403±120	453±93	0.83±0.33	0.55±0.14
Pizzas (n=155 / n=155)	234±26	237±25	9.2±2.7	9.8±2.9	3.5±1.2	3.7±1.2	28.1±3.7	28.0±3.0	1.8±0.7	1.6±0.6	3.3±1.5	3.3±1.5	9.9±1.8	10.0±2.0	497±103	533±96	0.84±0.21	0.80±0.19
Ready-to-serve soups (n=223 / n=180)	50±19	50±19	1.6±1.6	1.4±1.6	0.5±0.7	0.4±0.5	7.1±2.3	7.3±2.1	1.2±0.8	1.5±1.1	1.9±1.5	1.3±1.1	1.8±1.0	2.0±1.0	235±63	274±50	0.67±0.28	0.41±0.18
Processed meats (n=361 / n=317)	195±105	181±82	11.6±10.8	11.3±9.2	4.1±4.0	4.0±3.3	2.6±2.4	3.5±2.1	0.2±0.8	0.0±0.3	0.8±1.2	1.2±1.2	20.5±5.5	15.8±4.3	1121±480	986±269	4.57±3.84	2.31±1.76
Yogurts and dairy desserts (n=380 / n=325)	96±41	80±26	2.5±3.1	1.7±1.4	1.5±2.1	1.0±0.8	13.8±5.3	12.0±4.2	0.4±0.8	0.1±0.4	10.6±4.1	9.5±3.5	4.5±2.6	3.8±1.9	60±43	54±27	0.83±0.49	0.59±0.24
Frozen meals (n=386 / n=275)	126±39	122±33	3.8±2.5	3.8±2.3	1.4±2.1	1.4±1.4	17.0±5.7	16.4±4.8	1.5±2.1	1.2±1.4	2.9±3.1	2.6±2.5	6.0±1.8	5.8±1.7	248±80	257±75	1.36±0.59	1.07±0.38
Granola bars (n=310 / n=240)	418±44	419±46	15.0±6.5	15.0±6.0	4.4±2.8	4.6±2.8	65.6±9.5	66.7±7.6	7.1±4.7	5.8±4.0	27.6±8.1	28.8±9.0	8.2±5.7	7.3±4.2	233±116	274±107	2.09±1.00	1.63±0.47
Pasta sauces (n=322 / n=210)	68±32	55±28	3.6±3.3	2.3±2.8	1.2±1.9	0.8±1.7	7.1±2.1	7.2±1.4	1.3±0.7	1.4±0.6	3.9±1.7	4.0±1.1	2.0±1.4	1.9±0.8	345±129	360±83	0.87±0.45	0.51±0.19
Cookies (n=696 / n=494)	467±50	462±47	20.2±6.3	18.7±5.4	9.0±5.7	7.7±4.8	66.7±7.6	69.1±4.9	3.1±2.3	2.6±2.2	32.3±9.7	34.2±8.6	5.7±2.4	5.2±1.8	259±124	285±103	1.71±1.07	1.28±0.42
Sausages (n=289 / n=214)	224±54	251±34	16.0±7.1	19.8±4.4	5.5±2.9	6.8±1.9	4.5±3.4	5.6±2.1	0.4±0.7	0.2±0.5	1.1±1.5	0.7±1.5	15.5±3.8	13.0±2.2	676±171	777±131	1.67±0.77	1.14±0.35
Salty snacks (n=627 / n=503)	502±51	524±39	26.0±9.2	29.4±7.4	3.8±4.1	3.7±2.5	60.8±9.1	58.9±7.3	4.8±3.1	3.8±2.1	4.1±6.6	2.6±3.7	7.2±3.9	6.4±2.0	651±319	664±262	1.59±0.75	1.42±0.39
Crackers (n=439 / n=223)	430±56	462±40	13.4±7.8	17.5±6.3	3.0±3.8	4.0±2.9	68.1±10.1	67.8±6.2	5.3±4.7	3.3±3.3	5.4±6.8	4.8±5.0	9.9±3.7	8.7±2.6	632±281	766±241	2.50±1.48	1.69±0.56
Cheese products (n=118 / n=87)	252±54	254±39	18.9±6.7	17.2±5.5	11.7±5.1	10.2±3.5	10.2±5.6	12.4±5.3	0.3±1.1	0.0±0.2	5.5±4.1	7.5±3.7	10.1±5.5	12.6±4.2	765±478	1218±433	2.05±1.24	1.50±0.60
Flavoured milks and plant-based beverages (n=203 / n=148)	48±25	51±20	1.6±0.8	1.4±0.5	0.5±0.6	0.4±0.4	6.2±4.7	7.5±4.1	0.4±0.5	0.3±0.3	4.6±4.3	6.1±4.3	2.3±2.2	2.2±1.3	54±21	62±19	0.48±0.33	0.35±0.14

* Number of products offered ("Offer")/number of products for which sales data was available ("Purchases").

Table 6. The proportion of products offered and purchased exceeding the daily value thresholds for the applicable nutrients, and the voluntary sodium reduction target by food category

	Saturated Fats ≥ 15% DV		Sugars ≥ 15% DV		Sodium ≥ 15% DV		Sodium ≥ Target		Fibre ≥ 15% DV	
	% offer	% purchases	% offer	% purchases	% offer	% purchases	% offer	% purchases	% offer	% purchases
Breakfast cereals (n=331 / n=306)*	6	7	20	36	5	16	37	65	50	51
Sliced breads (n=294 / n=262)	0	0	2	2	27	65	77	87	31	29
Pizzas** (n=155 / n=155)	71	79	0	0	94	98	85	95	45	36
Ready-to-serve soups (n=223 / n=180)	17	9	3	2	94	100	46	79	17	32
Sliced processed meats (n=361 / n=317)	37	40	0	0	95	97	65	71	0	0
Yogurts and dairy desserts (n=380 / n=325)	13	2	26	20	1	0	N/A	N/A	2	0
Frozen meals** (n=386 / n=275)	22	19	2	2	40	38	60	65	51	40
Granola bars (n=310 / n=240)	31	36	37	39	0	0	64	78	28	15
Pasta sauces (n=322 / n=210)	18	11	0	0	77	92	58	71	2	0
Cookies (n=694 / n=494)	63	53	63	74	0	0	58	67	4	2
Sausages (n=289 / n=214)	62	83	0	0	78	96	40	67	0	0
Salty snacks (n=627 / n=503)	14	10	2	0	41	38	77	87	14	4
Crackers (n=439 / n=223)	16	20	2	0	42	70	57	77	21	8
Cheese products (n=118 / n=87)	83	97	0	0	40	80	64	92	0	0
Flavoured milks and plant-based beverages (n=203 / n=148)	15	8	32	50	0	0	N/A	N/A	2	0
Total (n=5132)	29	25	16	16	37	48	58	71	17	17

*Number of products offered ("Offer")/number of products for which sales data was available ("Purchases").

**The 30% DV threshold was used for these categories.

Table 7. Theoretical improvements proposed for each food category

Food Categories	Saturated Fats	Sugars	Sodium	Fibre
	Proposed Improvement	Proposed Improvement	Proposed Improvement	Proposed Improvement
Breakfast cereals		↓ 15% (1.9 g)	↓ 5% (11 mg)	↑ 10% (0.4 g)
Sliced breads			↓ 5% (17 mg)	↑ 5% (0.1 g)
Pizzas	↓ 5% (0.4 g)		↓ 15% (160 mg)	↑ 5% (0.2 g)
Ready-to-serve soups			↓ 10% (72 mg)	↑ 5% (0.2 g)
Sliced processed meats	↓ 15% (0.3 g)		↓ 5% (27 mg)	
Yogurts and dairy desserts		↓ 5% (0.5 g)		
Frozen meals	↓ 5% (0.2 g)		↓ 15% (105 mg)	↑ 5% (0.2 g)
Granola bars	↓ 5% (0.1 g)	↓ 15% (1.5 g)		↑ 5% (0.1 g)
Pasta sauces	↓ 5% (0.1 g)		↓ 10% (48 mg)	↑ 5% (0.1 g)
Cookies	↓ 15% (0.3 g)	↓ 10% (1.0 g)		↑ 15% (0.1 g)
Sausages	↓ 15% (0.6 g)		↓ 15% (72 mg)	
Salty snacks	↓ 5% (0.1 g)		↓ 15% (50 mg)	↑ 10% (0.2 g)
Crackers	↓ 15% (0.1 g)		↓ 15% (23 mg)	↑ 5% (0.04 g)
Cheese products	↓ 5% (0.2 g)		↓ 10% (37 mg)	
Flavoured milks and plant-based beverages		↓ 5% (0.7g)		

