



Submission to the Canada Gazette 1 Consultation on Regulations Amending Certain Regulations Made Under the Food and Drugs Act (Nutrition Symbols, Other Labelling Provisions, Partially Hydrogenated Oils and Vitamin D)

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## Introduction

Dairy Farmers of Canada (DFC) care deeply about the health of Canadians, and are fully supportive of the broad goal of the *Healthy Eating Strategy*: to help consumers make informed, healthier choices. Unfortunately, Health Canada's proposed Front-of-Package (FOP) labelling regulation suffers from a critical lack of nuance, fails to consider the best available scientific evidence, and does not include a thorough cost-benefits analysis (as required by the Government of Canada's regulatory process). Such an approach will only serve to confuse Canadians about the overall value of many nutritious foods, including milk products, and create a policy framework that does not reflect the best and most up-to-date scientific evidence available.

As part of Health Canada's *Healthy Eating Strategy*, introduced in 2016, Health Canada is proposing to impose a FOP on prepackaged foods containing more than 15% of the Daily Value (DV) of sugar, saturated fat, and/or sodium – regardless of their nutritional value, or impact on reducing chronic diseases. In the case of prepackaged meals and main dishes, the thresholds would be 30% of the DV.

According to the Regulatory Impact Analysis Statement (RIAS), in total, 37,600 SKUs will be affected by the proposed regulation. Of these 37,600 SKUs, DFC calculates that 19,269 will be dairy products, which represents up to 89% of all dairy SKUs (see Appendix B). It is incomprehensible that in a policy designed to promote healthy eating, over 50% of all affected SKUs will be dairy products, in spite of their widely recognized nutritional benefits and beneficial impacts on chronic diseases, including those prioritized by this policy.

Health Canada's 2015 Evidence Review for Dietary Guidance confirms that Canadians do not consume enough of the following eight nutrients: vitamin D, calcium, magnesium, zinc, potassium, vitamin A, vitamin C and fibre.<sup>1</sup> Not getting enough of these nutrients can have a significant impact, as they play multiple key roles in ensuring the maintenance of good health, growth and development. For example, among other things, inadequate intakes of calcium alone can compromise musculoskeletal health. Unfortunately, under the proposed approach, foods such as yogurt and cheese, which we know are a source of many of these essential nutrients, including vitamin A (cheese), magnesium (yogurt), potassium (yogurt), zinc and calcium (cheese and yogurt), would require a FOP label, while snack foods, such as most potato chips and all diet sodas, would not.

Any health policy framework that would exempt (by omission) potato chips and diet soft drinks is obviously flawed, and could lead Canadians to make unhealthy choices.

It must be noted that while DFC is aware of the concurrent online consultation on the symbols for FOP labelling, it will not participate because the way the consultation is constructed pre-empts respondents from expressing any dissenting views (directed consultation). DFC considers that this consultation is structured in such a way that it forces respondents to pick a symbol, whether or not they support the overall principle of having a symbol in the first place. Further, there is only one space for respondents to offer critical comments – which cannot be reached without first choosing a preferred symbol. This is an inherent bias in the online symbol consultation, which leads respondents in a direction that inevitably

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<sup>1</sup> Health Canada. Evidence review for dietary guidance. Technical report 2015. 2016.

serves to reinforce Health Canada’s own position. DFC has instead chosen to concentrate its efforts on this submission to Canada Gazette 1.

DFC’s submission examines the best available scientific evidence, which calls into question Health Canada’s approach – both in terms of its focus on three target nutrients as the sole determinants of the overall healthfulness of a food, as well as on each of the chosen nutrients themselves. The submission will also show that such an approach is particularly problematic when applied to milk products, whose nutritional and health value go far beyond their sodium, sugar, and saturated fat content.

In addition, the approach proposed by Health Canada is inconsistent with its previous positions. The submission will examine the strong evidence base, including Health Canada’s own 2015 Evidence Review,<sup>2</sup> which clearly demonstrates the many ways in which milk products support Health Canada’s goal for chronic disease risk reduction – especially those prioritized by this policy.

The submission will also consider several interventions made by the **current Government** at the World Trade Organization (WTO) Trade Barriers committee on this topic, which called into question the evidence base behind the Chilean FOP labelling initiative, upon which the Canadian model is based.

Finally, and notwithstanding the lack of supporting scientific evidence, and impacts that this flawed approach could have on the health of Canadians, the submission will show that within the RIAS, Health Canada has failed to make a thorough accounting of the costs of this policy. Although a series of selected assumptions were used to calculate the “benefits” of this policy over 10 years, the costs of this policy were only pegged at a one-time fee for implementation. While the RIAS acknowledges that there could be other significant costs, including those associated with market loss, it deems such costs as being “not quantifiable”. This represents a drastic underestimation of the true costs of this policy. Furthermore, in relation to FOP labelling, at no time did Health Canada reach out to the dairy sector in the development of the RIAS to assess what information was available. In this submission, DFC demonstrates that such costs are, in fact, quantifiable, and that a thorough, industry-wide cost-benefits analysis is essential before any further steps are taken.

According to a Nanos poll conducted in January 2018, 1/3 of Canadians would simply avoid any product carrying a FOP warning label, without seeking further information on the Nutrition Facts table. These findings are supported by an IPSOS study conducted in June 2017, which found that a third to nearly half of consumers surveyed, when made aware of the initiative, would reduce or stop their consumption of dairy products ‘sanctioned’ by a logo. This risks worsening the current under-consumption of milk products by Canadians.<sup>3,4</sup>

Health Canada must not solely define the overall healthfulness of a food for any policy under the *Healthy Eating Strategy* by its levels of sodium, sugar, or saturated fat alone. This approach is unbalanced, not based on current scientific evidence, and risks confusing consumers by unfairly vilifying nutrient-rich milk products.

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<sup>2</sup> Health Canada. Evidence review for dietary guidance. Technical report 2015. 2016.

<sup>3</sup> Statistics Canada. 2004 Canadian community health survey – Nutrition. Specific analyses requested by DFC.

<sup>4</sup> Statistics Canada. 2015 Canadian community health survey – Nutrition. Specific analyses requested by DFC.

Under these circumstances, the Treasury Board of Canada must request that Health Canada go back and conduct a fulsome review of all available evidence, and conduct a thorough cost-benefit analysis in the development of the RIAS.

In the Canada Gazette Part I (CG1) document, the list of full exemptions has been expanded to include foods like 2% M.F. and whole milk from the requirement to display a FOP label because there is scientific evidence for a protective effect on health. As mentioned in the CG1 document, “*these are foods which Health Canada does not want to discourage consumption*”. By exempting 2% and whole milk from this proposed policy, Health Canada recognizes the scientific evidence demonstrating the nutritional value of milk as a key contributor to the health of Canadians.

If Health Canada is intent on moving forward without injecting the appropriate balance into this policy, they must be encouraged to grant full exemptions for nutritious foods like milk products. Milk products are not part of the problem, they are part of the solution!

## Limitations of Determining the Healthfulness of a Food Solely by its Saturated Fat, Sugar, and Sodium Content

By choosing to determine the overall healthfulness of a food solely by its saturated fat, sugar, and sodium content, Health Canada is running counter to the best up-to-date available evidence – and risks confusing Canadians about the overall value of many nutritious foods, which could put their health at risk.

Assessing the overall healthfulness of a food based solely on three specific nutrients lacks the nuance necessary for an accurate determination. Foods are complex and composed of many nutritive and non-nutritive components, which, taken together, provide health impacts that, in many cases, are not what would be assumed by examining the specific nature and amounts of individual nutrients in isolation. **This is particularly true when it comes to reducing chronic non-communicable diseases (NCDs).**

In fact, current scientific evidence emphasizes that dietary guidance be based on foods, rather than focused on nutrients to limit, because the food matrix (i.e. all the nutrient and non-nutrient components of a given food and their interactions with one another) has a major impact on the ability of these nutrients to affect health.<sup>5,6,7</sup>

Additionally, according to a recent authoritative review of the evidence on *Dietary and Policy Priorities for Cardiovascular Disease, Diabetes, and Obesity*, conducted by world-renowned cardiovascular health expert, and Dean of the Friedman School of Nutrition Science & Policy at Tufts University, Dr. Dariush Mozaffarian (MD, DrPH), current scientific evidence supports a focus on foods and dietary patterns - rather than on individual nutrients - in order to reduce the risk of key chronic diseases and improve

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<sup>5</sup> Sievenpiper JL. Sickeningly sweet: does sugar cause chronic disease? No. *Can J Diabetes* 2016;40:287-295.

<sup>6</sup> Drouin-Chartier JP et al. Systematic review of the association between dairy product consumption and risk of cardiovascular-related clinical outcomes. *Adv Nutr* 2016;7:1026-1040.

<sup>7</sup> de Oliveira Otto MC et al. Dietary intake of saturated fat by food source and incident cardiovascular disease: the Multi-Ethnic Study of Atherosclerosis. *Am J Clin Nutr* 2012;96:397-404.

health.<sup>8</sup> The findings of this important and comprehensive review are in direct opposition with Health Canada’s nutrient focused approach, and state that such an approach “contributes to confusion about what constitutes a healthy diet, distracts from more effective strategies, and drives industry, policy makers, and the public toward diets which meet selected nutrient-cut points but provide little health benefit.”

**The evidence is clear: to improve the health of Canadians, the focus should not be on what single nutrients not to eat – it should be on what foods we should be eating.**

The limitations of such an approach are readily apparent in Health Canada’s proposal for FOP labelling.

For example, because they are over the thresholds for sodium, sugar, and/or saturated fat, many cheeses and flavoured yogurts will have to carry a FOP label - despite extensive scientific evidence showing they are associated with either neutral or beneficial effects on health.<sup>9,10,11,12,13,14,15,16,17</sup>

In contrast, most chips (because they are made using vegetable oil, which is low in saturated fat, and because the serving size chosen by Health Canada is 50 g – which is too small to meet the threshold for sodium) and all diet sodas (because they contain artificial sweeteners instead of sugar) will not have to carry a FOP label. This, despite the fact that they are not nutritious or healthful components of the diet. This is also the case for several brands and flavours of corn chips, artificially sweetened pudding cups, frozen fries, white bread, and fibre-poor breakfast cereals, among other foods (see Appendix A).

This is compounded by the fact that other nutrient poor-foods are just above the chosen thresholds, and may be easily reformulated in order to avoid the FOP symbol. For example, some commercial macaroni and cheese and frozen dinners are just above the 30% DV sodium threshold for prepackaged meals, and Frosted Raspberry Pop Tarts fall just above the 15% DV sugar threshold for prepackaged foods (see Appendix A). Should a Frosted Raspberry Pop Tart be considered healthier than nutrient dense

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<sup>8</sup> Mozaffarian D. Dietary and policy priorities for cardiovascular disease, diabetes, and obesity: a comprehensive review. *Circulation* 2016;133(2):187-225.

<sup>9</sup> Chen M et al. Dairy consumption and risk of type 2 diabetes: 3 cohorts of US adults and an updated meta-analysis. *BMC Med* 2014;12:215.

<sup>10</sup> Drouin-Chartier JP et al. Systematic review of the association between dairy product consumption and risk of cardiovascular-related clinical outcomes. *Adv Nutr* 2016;7:1026-1040.

<sup>11</sup> Elwood PC et al. The consumption of milk and dairy foods and the incidence of vascular disease and diabetes: an overview of the evidence. *Lipids* 2010;45:925-939.

<sup>12</sup> Ralston RA et al. A systematic review and meta-analysis of elevated blood pressure and consumption of dairy foods. *J Hum Hypertens* 2012;26:3-13.

<sup>13</sup> O’Sullivan TA et al. Food sources of saturated fat and the association with mortality: a meta-analysis. *Am J Public Health* 2013;103:e31-42.

<sup>14</sup> Aune D et al. Dairy products and the risk of type 2 diabetes: a systematic review and dose-response meta-analysis of cohort studies. *Am J Clin Nutr* 2013;98:1066-1083.

<sup>15</sup> Gao D et al. Dairy products consumption and risk of type 2 diabetes: systematic review and dose-response meta-analysis. *PLoS One* 2013;8:e73965.

<sup>16</sup> Hu D et al. Dairy foods and risk of stroke: a meta-analysis of prospective cohort studies. *Nutr Metab Cardiovasc Dis* 2014;24:460-469.

<sup>17</sup> Gijsbers L et al. Consumption of dairy foods and diabetes incidence: a dose-response meta-analysis of observational studies. *Am J Clin Nutr* 2016;103:1111-1124.

flavoured yogurt, simply because it has been reformulated and no longer meets the sugar threshold? Of course it shouldn't, but that is the perception that risks being created by this policy. Encouraging reformulation could even result in industry resorting to using chemical alternatives to replace sugar and sodium, which would not be highlighted by the FOP label. Just because a food can be reformulated does not mean it is beneficial for health!

Defining the overall healthfulness of a food solely by its sodium, sugar, and saturated fat content is overly simplistic – and risks worsening health outcomes by creating the perception that nutrient-poor foods such as chips and diet soda are healthier than nutrient-rich foods like cheese and flavoured yogurt.

Discouraging the consumption of nutritious milk products while encouraging less healthful foods is inconsistent with the evidence base, and will not support Health Canada's overall goals.

As outlined above, focusing on target nutrients in isolation is not supported by scientific evidence. It is equally important to note that current scientific evidence seriously questions classifying sodium, total sugar and saturated fats as nutrients of concern.

## Evidence Does Not Support Targeting Saturated Fat

Based on the totality of the strongest available evidence, including that contained within Health Canada's own evidence review, targeting saturated fat is not scientifically justified.

Health Canada's 2015 Evidence Review states that: "*there was no observed association between dietary saturated fat and the increase of CVD or CHD*".<sup>18</sup> Health Canada's conclusion in this regard is supported by strong evidence from several meta-analyses, including a World Health Organization commissioned meta-analysis, which found that saturated fat does not increase cardiovascular disease risk.<sup>19,20,21</sup>

Furthermore, a recent Position Statement from the Heart and Stroke Foundation of Canada, based on a review of the evidence by a panel of scientific experts, also recommends not including a threshold or limit for saturated fat.<sup>22</sup> This is inconsistent with Health Canada's proposed FOP criteria targeting saturated fat as a nutrient of public health concern.

With respect to the replacement of saturated fat with unsaturated fat, the scientific evidence is still evolving; however, research indicates that the replacement of saturated fat with unsaturated fat, including polyunsaturated fat, may not be beneficial. In fact, since Health Canada's publication of its

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<sup>18</sup> Health Canada. Evidence review for dietary guidance. Technical report 2015. 2016.

<sup>19</sup> de Souza RJ, et al. Intake of saturated and trans unsaturated fatty acids and risk of all cause mortality, cardiovascular disease, and type 2 diabetes: systematic review and meta-analysis of observational studies. *BMJ* 2015;351:h3978.

<sup>20</sup> Chowdhury R, et al. Association of dietary, circulating, and supplement fatty acids with coronary risk: a systematic review and meta-analysis. *Ann Intern Med* 2014;160:398-406.

<sup>21</sup> Siri-Tarano PW et al. Meta-analysis of prospective cohort studies evaluating the association of saturated fat with cardiovascular disease. *Am J Clin Nutr* 2010;91:535-546.

<sup>22</sup> Heart and Stroke Foundation of Canada. Saturated fat, heart disease and stroke. August 2015.

2015 evidence review, two studies providing the highest level of evidence (i.e. meta-analyses of randomized controlled trials) have been published which did not find any benefits on blood lipids, weight and CHD with replacement of saturated fat by unsaturated fat.<sup>23,24</sup>

**The food source of saturated fat is also important to consider.** While it may not be the case for all sources of saturated fat, those derived from dairy have been associated with reduced CVD risk.<sup>25,26</sup>

Finally, the **current population average intake of saturated fat in Canada is approximately 10% of total energy, which meets the recommendations set by global health authorities.** The 10% recommendation accepts that some individuals will be below and some above this value. However, Health Canada rationalizes that because some individuals are above this value, they are overconsuming saturated fat. This is not a statistically correct interpretation of a population-level recommendation. Recommendations aimed at populations accept that some are above and some below the recommended value, therefore, Canadians are meeting this recommendation and no further interventions are required to adjust intakes for saturated fat.

As outlined above, based on the totality of the strongest available scientific evidence and the current Canadian intakes, **there is no rationale for targeting saturated fat, especially those found in dairy products, as a nutrient of concern for Canadians.**

## Evidence Does Not Support Targeting Total Sugars

Public health experts generally agree that consuming excess added sugars (or, more precisely, excess free sugars), especially those found in non-nutritious sources, has a detrimental impact on weight and type 2 diabetes; however, there is no evidence linking naturally occurring intrinsic sugars with harmful health effects. Unfortunately, Health Canada's proposal does not differentiate added sugars from naturally occurring intrinsic sugars – it lumps all sugars in together by considering total sugar. Such an approach is simply not supported by the evidence.

According to Health Canada's 2015 Evidence Review, there is evidence that sugar-sweetened beverages (SSBs), such as soft drinks, free sugars and added sugars are associated with higher adiposity, increased weight gain, overweight, obesity and type 2 diabetes.<sup>27</sup> However, it is crucial to note that, as indicated by a Guideline from the World Health Organization (WHO), **this cannot be extrapolated to naturally**

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<sup>23</sup> Hamley S. The effect of replacing saturated fat with mostly n-6 polyunsaturated fat on coronary heart disease: a meta-analysis of randomised controlled trials. *Nutr J* 2017;16:30.

<sup>24</sup> Hannon BA et al. Clinical outcomes of dietary replacement of saturated fatty acids with unsaturated fat sources in adults with overweight and obesity: a systematic review and meta-analysis of randomized control trials. *Ann Nutr Metab* 2017;71:107-117.

<sup>25</sup> de Oliveira Otto MC et al. Dietary intake of saturated fat by food source and incident cardiovascular disease: the Multi-Ethnic Study of Atherosclerosis. *Am J Clin Nutr* 2012;96:397-404.

<sup>26</sup> Chowdhury R, et al. Association of dietary, circulating, and supplement fatty acids with coronary risk: a systematic review and meta-analysis. *Ann Intern Med* 2014;160:398-406.

<sup>27</sup> Health Canada. Evidence review for dietary guidance. Technical report 2015. 2016.

**occurring or intrinsic sugars such as the lactose found in milk products.**<sup>28</sup> In fact, as shown by the WHO Guideline, **there is no evidence to link naturally occurring or intrinsic sugars with harmful health effects.**

In addition, targeting total sugars does not take into account the food source of sugar - which is important to consider as the food matrix may modify the impact on health. As indicated in a recent study, while some food sources of sugar may have a negative impact on health (e.g. SSBs), others may have a beneficial role (i.e. yogurt).<sup>29</sup>

**The importance of considering the food source of sugar was also outlined in the 2018 Clinical Practice Guidelines for Nutrition Therapy from Diabetes Canada, wherein** they state that some food sources of added sugar such as whole grains and dairy products (yogurt) have not been shown to have any adverse associations with health outcomes, such as hypertension and coronary heart disease (CHD). Furthermore, they also state that no adverse relationship has been shown for total sugar.<sup>30</sup>

Finally, as outlined by the American Heart Association in their Scientific Statement on Dietary Sugars Intake and Cardiovascular Health, when sugar is added to otherwise nutritious foods such as yogurt and flavoured milk, the quality of the diet improves and there is no adverse effect on weight.<sup>31</sup>

The best available evidence supports targeting added sugars in nutrient-poor foods, especially SSBs such as soft drinks, but there is **no rationale for targeting total sugars as a nutrient of concern for Canadians, or nutrient rich foods that contain added sugar.**

#### Potential Negative Impacts of Targeting Total Sugars

Unfortunately, as currently proposed, consumers will be discouraged from buying many nutrient-rich milk products like sweetened yogurt because they will be identified as “high in sugar” – despite the fact that the scientific evidence does not support the association of any harmful effect on health with these nutritious foods. In fact, nutritious foods like sweetened yogurt are associated with **reduced cardiometabolic risk**, including a reduced risk of type 2 diabetes and weight gain.<sup>32,33,34</sup>

Nutritious foods like sweetened yogurt are not a part of the problem – the evidence clearly shows that they are a part of the solution; unfortunately, if Health Canada moves ahead with this proposed policy their consumption will be discouraged nonetheless.

In addition, it is important to consider that while a FOP label on sweetened yogurt may encourage a few consumers to switch to plain yogurt, many of them will choose to simply add sugar to plain yogurt for

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<sup>28</sup> World Health Organization. Guideline: Sugars intake for adults and children. 2015.

<sup>29</sup> Sievenpiper JL. Sickeningly sweet: does sugar cause chronic disease? No. *Can J Diabetes* 2016;40:287-295.

<sup>30</sup> Sievenpiper JL et al. Diabetes Canada 2018 Clinical Practice Guidelines. Nutrition Therapy. *Can J Diabetes* 2018; 42:S64-S79.

<sup>31</sup> Johnson RK et al. Dietary sugars intake and cardiovascular health: a scientific statement from the American Heart Association. *Circulation* 2009;120:1011-1020.

<sup>32</sup> Chen M et al. Dairy consumption and risk of type 2 diabetes: 3 cohorts of US adults and an updated meta-analysis. *BMC Med* 2014;12:215.

<sup>33</sup> Sievenpiper JL. Sickeningly sweet: does sugar cause chronic disease? No. *Can J Diabetes* 2016;40:287-295.

<sup>34</sup> Mozaffarian D et al. Changes in diet and lifestyle and long-term weight gain in women and men. *N Engl J Med* 2011;364:2392-2404.

taste. However, the evidence suggests the amount of sugar added to plain yogurt by consumers could be more than the average equivalent amount of added sugar present in commercial sweetened yogurt.<sup>35</sup> This is particularly concerning since the goal of this policy is to encourage Canadians to reduce their added sugar intake.

Finally, because of the misplaced focus on total sugars, consumers may be swayed to choose foods that contain high-intensity sweeteners with a low nutritional value, such as pudding cups with no added sugar, or diet sodas, over nutritious foods such as yogurt. This will not help Health Canada achieve its goal to help Canadians make the healthier choice.

### Potential Unintended Consequences of Reformulation

Because flavoured milk contains naturally occurring sugar (i.e. lactose) there is less than 3 g per 250 ml serving allowance for added sugar, meaning that there is very little room for added sugar in milk to remain under the “high in sugar” threshold. By basing their thresholds on total sugars, in spite of the evidence showing that naturally occurring sugars like lactose are not associated with harmful health effects, Health Canada has placed milk products at a disadvantage compared to other products with less nutritional value.

For example, an almond beverage that contains hardly any naturally occurring sugar can add up to 14 g of sugar and still avoid the “high in sugar” label; whereas a sweetened milk will trigger the FOP label with only 3 g of added sugar.

In addition, this narrow range also leaves very little room for the reformulation of sweetened milk products. As a result, reformulating these products to meet the <15% DV target and avoid the FOP label may result in the industry denaturing milk by removing its lactose to allow for added sugars, which have a sweeter taste. Lactose has been suggested as having prebiotic potential that is relevant to mitigating diseases such as colorectal cancer and inflammatory bowel diseases, so its removal should be discouraged as a means to reduce sugar content.<sup>36</sup>

As noted previously, given that added sugars in nutrient poor foods (and more specifically non-nutritive SSBs) are the source of concern, rather than naturally occurring sugars or nutritious foods to which sugar has been added, such reformulation would be directly contrary to one of the goals of the FOP policy -- to reduce the consumption of added sugars.

Furthermore, this policy may also encourage food manufacturers to reformulate their products with high-intensity sweeteners. It may even lead consumers to choose foods that contain high-intensity sweeteners with a low nutritional value, such as pudding cups with no added sugar, or diet sodas, over nutritious foods such as yogurt. This is particularly concerning because, according to a recent scientific article, nutrient poor beverages containing artificial sweeteners such as soft drinks, flavored water, fruit drinks, ready to drink coffee and tea should not be promoted as part of a healthy diet, as there is an absence of consistent evidence to support their role in preventing weight gain and a lack of studies on

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<sup>35</sup> Saint-Eve A et al. How much sugar do consumers add to plain yogurt? Insights from a study examining French consumer behavior and self-reported habits. *Appetite* 2016;99:277-284.

<sup>36</sup> Szilagy A. Review article: lactose – a potential prebiotic. *Aliment Pharmacol Ther* 2002;16:1591-1602.

other long-term potentially negative health effects.<sup>37</sup> These concerns are corroborated in another recent study providing the highest level of evidence (i.e. a meta-analysis of randomized controlled trials and prospective cohort studies) which concluded that: *“the evidence from RCTs does not clearly support the intended benefits of non-nutritive sweeteners for weight management, and observational data suggest that routine intake of non-nutritive sweeteners may be associated with increased BMI and cardiometabolic risk.”*<sup>38</sup>

Therefore, without long-term evidence on the effect of daily consumption of artificial sweeteners, it is imperative that any new nutrition policy does not encourage an increased consumption of foods containing them, and should not encourage food manufacturers to use high-intensity sweeteners when reformulating to reduce added sugar.

### Evidence Does Not Support Sodium Targets

While there is general consensus that excessive sodium intakes can have an unfavourable impact on health – the evidence does not support Health Canada’s sodium targets.

Health Canada’s guidelines currently recommend that people consume between 1,500 mg and 2,300 mg of sodium per day, which is far below the average of 3,400 mg of sodium per day Canadians are actually consuming.<sup>39</sup>

However, in 2013, the Institute of Medicine (IOM) published a report which concluded that *“studies on health outcomes are **inconsistent in quality and insufficient in quantity** to determine that sodium intake below 2,300 mg/day either increase or decrease the risk of heart disease, stroke, or all-cause mortality in the general US population”*.<sup>40</sup> This report also concluded that there is *“**no evidence for benefit and some evidence suggesting risk** of adverse health outcomes associated with sodium intake levels in ranges approximately 1,500 to 2,300 mg/day among those with diabetes, kidney disease, or CVD.”*

Furthermore, there is no robust evidence that lowering sodium below an intake of 3,000 mg/day is likely to lead to a reduction in cardiovascular events or mortality compared to sodium intake between 3,000 to 5,000 mg/day. Twelve recent studies and two recent meta-analyses of all observational studies involving >400,000 people indicate that while sodium intake above 5,000 mg/day is associated with higher mortality and cardiovascular disease event rates compared to sodium intake between 3,000 and

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<sup>37</sup> Borges MC et al. Artificially sweetened beverages and the response to the global obesity crisis. *PLoS Med* 2017;14(1):e1002195.

<sup>38</sup> Azad MB et al. Nonnutritive sweeteners and cardiometabolic health: a systematic review and meta-analysis of randomized controlled trials and prospective cohort studies. *CMAJ* 2017;189(28):929-939.

<sup>39</sup> Health Canada. Sodium in Canada. <https://www.canada.ca/en/health-canada/services/food-nutrition/healthy-eating/sodium.html>. Accessed March 12, 2018.

<sup>40</sup> Institute of Medicine. Sodium intake in populations: assessment of evidence. Washington, DC: The National Academies Press, 2013.

5,000 mg/day, there is no evidence that lowering sodium further (<3,000 mg/day) is associated with better health.<sup>41,42,43,44,45,46,47,48,49,50,51,52,53,54</sup>

Moreover, there are concerns that sodium intake below 3,000 mg/day may be associated with a higher risk of death, compared to those with intakes between 3,000 to 5,000 mg/day. This has been repeatedly observed in most large studies, despite extensive statistical adjustments; has been seen in studies done by several different investigators from over 50 countries; and, has been observed in those with and without vascular disease, those with and without diabetes and those with and without hypertension.

With an average consumption of 3,400 mg of sodium per day, Canadians' sodium intake is currently optimal; current evidence does not support that reducing sodium intake to less than 3,000 mg per day is effective or safe.

Therefore, before any initiative to reduce sodium to current targeted levels (ie  $\leq 2,300$  mg/day) is made, robust data proving that it is beneficial and safe is essential. This can only be achieved by the completion of large, well designed, adequately powered randomized trials.

**In the absence of such data, it is premature to introduce initiatives that aim to reduce sodium to such low levels (a level that few people in the world currently consume) and which may have unintended**

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<sup>41</sup> Thomas MC et al. The association between dietary sodium intake, ESRD, and all-cause mortality in patients with type 1 diabetes. *Diabetes Care* 2011;34:861-866.

<sup>42</sup> Ekinci EI et al. Dietary salt intake and mortality in patients with type 2 diabetes. *Diabetes Care* 2011;34:703-709.

<sup>43</sup> Stolarz-Skrzypek K et al. Fatal and nonfatal outcomes, incidence of hypertension, and blood pressure changes in relation to urinary sodium excretion. *JAMA* 2011;305:1777-1785.

<sup>44</sup> O'Donnell MJ et al. Urinary sodium and potassium excretion and risk of cardiovascular events. *JAMA* 2011;306:2229-2238.

<sup>45</sup> Pfister R et al. Estimated urinary sodium excretion and risk of heart failure in men and women in the EPIC-Norfolk study. *Eur J Heart Fail* 2014;16:394-402.

<sup>46</sup> Saulnier PJ et al; SURDIAGENE Study Group. Sodium and cardiovascular disease. *N Engl J Med* 2014;371:2135-2136.

<sup>47</sup> O'Donnell M et al; PURE Investigators. Urinary sodium and potassium excretion, mortality, and cardiovascular events. *N Engl J Med* 2014; 371: 612-623.

<sup>48</sup> Mentz et al; EPIDREAM and ONTARGET/TRANSCEND Investigators. Associations of urinary sodium excretion with cardiovascular events in individuals with and without hypertension: a pooled analysis of data from four studies. *Lancet* 2016;388:465-475.

<sup>49</sup> Alderman MH et al. Dietary sodium intake and mortality: the National Health and Nutrition Examination Survey (NHANES I). *Lancet* 1998;351:781-785.

<sup>50</sup> Cohen HW et al. Sodium intake and mortality in the NHANES II follow-up study. *Am J Med* 2006;119:275.e7-14.

<sup>51</sup> Cohen HW et al. Sodium intake and mortality follow-up in the Third National Health and Nutrition Examination Survey (NHANES III). *J Gen Intern Med* 2008;23:1297-1302.

<sup>52</sup> Mills KT et al. Sodium Excretion and the Risk of Cardiovascular Disease in Patients With Chronic Kidney Disease. *JAMA* 2016;315:2200-2210.

<sup>53</sup> Graudal N et al. Compared with usual sodium intake, low- and excessive-sodium diets are associated with increased mortality: a meta-analysis. *Am J Hypertens* 2014;27:1129-1137.

<sup>54</sup> Graudal N. A Radical Sodium Reduction Policy is not Supported by Randomized Controlled Trials or Observational Studies: Grading the Evidence. *Am J Hypertens* 2016;29:543-548.

**consequences on the health of Canadians. It could also encourage food manufacturers to replace sodium with chemical alternatives, which would not be highlighted by this policy.**

### Reducing Sodium in Cheese

As proposed, the sodium content for cheese for FOP is evaluated on a 50 g serving rather than on the 30 g Reference Amount currently used on the Nutrition Facts table. Unless exemptions are granted, this will result in many cheeses being identified as “high in sodium”, in spite of the important role salt plays in food safety.

It is important to recognize and accommodate for the fact that salt (sodium chloride) is an integral part of the cheese-making process, serving many crucial roles such as: inhibition of pathogens, control of enzymatic activities, modulation of starter cultures and ripening flora, texture and functional properties (e.g., stretching, melting) and taste. Salt is also essential for controlling moisture content and ensuring safety. These elements should therefore be considered in any initiative aimed at reducing sodium in food.

### Use of the Reference Amount for Cheese

**If Health Canada intends on moving forward with the FOP policy, DFC encourages a 30g reference amount for cheese, instead of the currently proposed 50 g serving – which is inconsistent with the information in the Nutrition Facts table.**

## Impact of Milk Products on Health

### Milk Products Support Health Canada’s Goal for Chronic Disease Risk Reduction

The totality of the highest quality scientific evidence clearly demonstrates the key role of milk products in reducing the risk of chronic NCDs, **specifically those identified by Health Canada as priorities for the purposes of this policy**, including: cardiovascular disease, certain cancers, type 2 diabetes, and musculoskeletal disease.

Appendix G of Health Canada’s 2015 Evidence Review for Dietary Guidance provides a summary of this evidence:<sup>55</sup>

- Milk reduces the risk of colorectal cancer. This evidence has more recently been updated by the World Cancer Research Fund and the American Institute for Cancer Research (2017).<sup>56</sup> This updated report concludes that strong evidence exists to support colorectal cancer risk reduction with the consumption of milk products (includes evidence for total dairy, milk, cheese and dietary calcium intakes).
- Milk and dairy products reduce the risk of cardiovascular disease and coronary heart disease.

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<sup>55</sup> Health Canada. Evidence review for dietary guidance. Technical report 2015. 2016.

<sup>56</sup> World Cancer Research Fund / American Institute for Cancer Research. Continuous Update Project. Diet, nutrition, physical activity and colorectal cancer. 2017.

- Milk and dairy products reduce the risk of stroke.
- Milk and dairy products reduce blood pressure.
- Milk and dairy products contribute to bone health in children.
- Milk and dairy products reduce the risk of type 2 diabetes.
- The evidence is generally as strong or stronger for milk products' association with reduced risk of the above conditions as the evidence for vegetables, fruit, whole grains and plant-based protein foods (i.e. legumes, nuts and seeds, soy/soy products/soy protein, vegetable protein).

**Given the role of milk products in reducing the risk of NCDs, specifically those prioritized by Health Canada, DFC encourages Health Canada to consider a broad exemption for nutritious milk products (including all milks, cheese, yogurts and other cultured milk products) due to their contributions to the health of Canadians.**

### Cheese and Health

Despite its sodium and saturated fat content, several studies have consistently shown that cheese has a favourable or neutral effect on different health outcomes.

Cheese does not have an adverse impact on blood pressure or cardiovascular health. In fact, it has been associated with a **reduction in the risk of stroke and type 2 diabetes**.<sup>57,58</sup> For example in the Framingham Heart Study Offspring Cohort (Hruby et al.),  $\geq 4$  servings of cheese per week were associated with **63% lower risk** of type 2 diabetes.

Furthermore, in a 2017 meta-analysis, long-term cheese consumption was not associated with an increased risk of all-cause mortality.<sup>59</sup> Regular fat, regular sodium cheese was also part of the original DASH diet, a dietary pattern that is recognized for its benefits in reducing blood pressure.<sup>60</sup>

Given the evidence supporting its health benefits, cheese should be considered to be a part of the solution in terms of reducing NCDs, not part of the problem.

### Higher Fat Milk Products and Health

Higher fat dairy products show either neutral or favourable (i.e. reduced risk) association with cardiovascular-related clinical outcomes such as cardiovascular disease, coronary artery disease, stroke, hypertension, metabolic syndrome, and type 2 diabetes.<sup>61</sup> Studies have also shown that high fat, **but**

<sup>57</sup> Chen M et al. Dairy consumption and risk of type 2 diabetes: 3 cohorts of US adults and an updated meta-analysis. *BMC Med* 2014;12:215.

<sup>58</sup> Hruby A et al. Associations of Dairy Intake with Incident Prediabetes or Diabetes in Middle-Aged Adults Vary by Both Dairy Type and Glycemic Status. *J Nutr* 2017.

<sup>59</sup> Tong X et al. Cheese Consumption and Risk of All-Cause Mortality: A Meta-Analysis of Prospective Studies. *Nutrients* 2017;9.

<sup>60</sup> Appel LJ et al. A clinical trial of the effects of dietary patterns on blood pressure. DASH Collaborative Research Group. *N Engl J Med* 1997;336:1117-1124.

<sup>61</sup> Drouin-Chartier JP et al. Systematic review of the association between dairy product consumption and risk of cardiovascular-related clinical outcomes. *Adv Nutr* 2016;7:1026-1040.

**not low fat** dairy products, are associated with reduced risk of metabolic syndrome<sup>62</sup> and are also a factor in reducing weight gain<sup>63,64</sup>. The exact reasons for this are still unclear, but could be related to the fatty acids in dairy products. For example, with respect to metabolic syndrome, the study by Drehmer et al. found that the saturated fat from dairy explained the protective effect seen with high fat dairy.

Moreover, the original DASH diet, which included mainly lower-fat dairy products - but also included regular-fat cheese - resulted in a beneficial impact on blood pressure.<sup>65</sup> Furthermore, a more recent study based on a modified version of the DASH diet with full-fat versions of all dairy products has demonstrated a similar beneficial impact on blood pressure; however, this high-fat dairy DASH diet also improved other important cardiovascular risk factors such as plasma triglycerides and VLDL cholesterol concentrations without increasing LDL cholesterol.<sup>66</sup>

The benefits of cheese and higher fat dairy products were also highlighted in the 2018 Clinical Practice Guidelines for Nutrition Therapy from Diabetes Canada wherein they state that: *“systematic reviews and meta-analyses of prospective cohort studies inclusive of people with diabetes have also shown a protective association of cheese with incident CHD; low-fat dairy products with incident CHD; and total, low-fat, and full-fat dairy products, and total milk with incident stroke over 5 to 26 years of follow up.”*<sup>67</sup>

Additionally, the proposed FOP initiative will discourage parents from buying cheeses and higher-fat yogurts for their children. This contradicts Health Canada’s most recent recommendations for feeding children up to 2 years of age.<sup>68</sup> According to a joint statement of Health Canada, the Canada Paediatric Society, Dietitians of Canada and Breastfeeding Committee for Canada, *“Dietary fat restriction is not recommended for children younger than two years. This is because it may compromise a young child’s intake of energy and essential fats. This can adversely affect growth and development. There is no evidence that such restrictions provide any benefits during childhood. **Nutritious foods that contain fat, such as breastmilk, homogenized (3.25% M.F.) cow milk, cheese, avocado and nut butters provide a concentrated energy source during a life stage when requirements are particularly high.**”*

**Therefore, regular fat milk products such as whole milk, regular fat cheese and higher fat yogurt, should be exempt from FOP labelling in order to support parents in choosing foods that align with**

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<sup>62</sup> Drehmer M et al. Total and full-fat, but not low-fat, dairy product intakes are inversely associated with metabolic syndrome in adults. *J Nutr* 2016;146:81-89.

<sup>63</sup> Rautiainen S et al. Dairy consumption in association with weight change and risk of becoming overweight or obese in middle-aged and older women: a prospective cohort study. *Am J Clin Nutr* 2016;103:979-988.

<sup>64</sup> Kratz M et al. The relationship between high-fat dairy consumption and obesity, cardiovascular, and metabolic disease. *Eur J Nutr* 2013;52:1-24.

<sup>65</sup> Appel LJ et al. A clinical trial of the effects of dietary patterns on blood pressure. DASH Collaborative Research Group. *N Engl J Med* 1997;336:1117-1124.

<sup>66</sup> Chiu S et al. Comparison of the DASH (Dietary Approaches to Stop Hypertension) diet and a higher-fat DASH diet on blood pressure and lipids and lipoproteins: a randomized controlled trial. *Am J Clin Nutr* 2016;103:341-347.

<sup>67</sup> Sievenpiper JL et al. Diabetes Canada 2018 Clinical Practice Guidelines. Nutrition Therapy. *Can J Diabetes* 2018; 42:S64-S79.

<sup>68</sup> Health Canada. Nutrition for healthy term infants: Recommendations from birth to six months - A joint statement of Health Canada, Canadian Paediatric Society, Dietitians of Canada, and Breastfeeding Committee for Canada. 2015; <http://www.hc-sc.gc.ca/fn-an/nutrition/infant-nourisson/recom/index-eng.php>.

**Health Canada’s recommendation for feeding young children. This exemption would also support the evidence that higher fat milk products are associated with beneficial effects on health.**

### Sweetened Dairy Products and Health

As noted previously, current evidence does not support an unfavourable effect of nutritious foods such as sweetened yogurt and sugar-sweetened milk on obesity and type 2 diabetes. In fact, nutritious foods like sweetened yogurt are associated with **reduced cardiometabolic risk**, including a reduced risk of type 2 diabetes and weight gain.<sup>69,70</sup> Moreover, according to a meta-analysis by Harvard researchers, total yogurt consumption (which includes sweetened yogurt) was associated with **reduced risk** of type 2 diabetes.<sup>71</sup> These benefits of yogurt were also outlined in the 2018 Clinical Practice Guidelines for Nutrition Therapy from Diabetes Canada.<sup>72</sup>

Furthermore, in the Scientific Statement of the American Heart Association on Dietary Sugars Intake and Cardiovascular Health, they state that: “*when sugars are added to otherwise nutrient-rich foods, such as sugar-sweetened dairy products like flavoured milk and yogurts and sugar-sweetened cereal, the quality of children’s and adolescents’ diets improves, and in the case of flavoured milks, no adverse effects on weight status were found*”.<sup>73</sup> In addition, a recent randomized controlled trial, supported by a Canadian Government initiative, showed that chocolate milk and a sweetened yogurt drink had favourable effects on satiety and food intake in normal and overweight children 9-14 years old.<sup>74</sup>

Finally, in a 2016 systematic review, it was concluded that there is no association between flavoured milk intake and weight status among normal-weight children (with inconclusive effects in overweight children).<sup>75</sup>

### Proposal for Front-of-Package Labelling Threatens Achievement of Health Canada’s Goals

According to specific analyses conducted by the Canadian Community Health Survey (CCHS), the under-consumption of Milk and Alternatives has worsened over the past decade.<sup>76,77</sup> In fact, while the recommended intake of Milk and Alternatives is between 2 to 4 servings, depending on the age group, from 2004 to 2015, the average intake for Canadians aged four years and older declined from 1.77

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<sup>69</sup> Sievenpiper JL. Sickeningly sweet: does sugar cause chronic disease? No. *Can J Diabetes* 2016;40:287-295.

<sup>70</sup> Mozaffarian D et al. Changes in diet and lifestyle and long-term weight gain in women and men. *N Engl J Med* 2011;364:2392-2404.

<sup>71</sup> Chen M et al. Dairy consumption and risk of type 2 diabetes: 3 cohorts of US adults and an updated meta-analysis. *BMC Med* 2014;12:215.

<sup>72</sup> Sievenpiper JL et al. Diabetes Canada 2018 Clinical Practice Guidelines. Nutrition Therapy. *Can J Diabetes* 2018; 42:S64-S79.

<sup>73</sup> Johnson RK et al. Dietary sugars intake and cardiovascular health: a scientific statement from the American Heart Association. *Circulation* 2009;120:1011-1020.

<sup>74</sup> Vien S et al. Pre- and within-meal effects of fluid dairy products on appetite, food intake, glycemia, and regulatory hormones in children. *Appl Physiol Nutr Metab* 2017;42:302-310.

<sup>75</sup> Fayet-Moore F. Effect of flavored milk vs plain milk on total milk intake and nutrient provision in children. *Nutr Rev* 2016;74:1-17.

<sup>76</sup> Statistics Canada. 2004 Canadian community health survey – Nutrition. Specific analyses requested by DFC.

<sup>77</sup> Statistics Canada. 2015 Canadian community health survey – Nutrition. Specific analyses requested by DFC.

servings per day to 1.27 servings per day (see table below). As currently proposed, the implementation of Front-of-Package labelling is likely to worsen this under-consumption problem.

#### *Milk and Alternative Intake in Canadian Four Years and Older in 2004 and 2015 (serving/day)*

	<b>Milk</b>	<b>Yogurt</b>	<b>Cheese</b>	<b>Total</b>
<b>2004</b>	1.10	0.12	0.55	1.77
<b>2015*</b>	0.62	0.15	0.50	1.27

\*Does not include plant-based beverage intake, whose contribution is not significant. According to Nielsen data from 2015, milk represented 94% of the market and plant based beverages (soy, rice, almond and others) 6% of the market.

#### Milk Products Are a Key Source of Priority Nutrients

Health Canada’s 2015 Evidence Review for Dietary Guidance confirms that Canadians do not consume enough of the following eight nutrients: **vitamin D, calcium, magnesium, zinc, potassium, vitamin A, vitamin C and fibre.**<sup>78</sup> Notably, milk products are a key source of six of these nutrients (those identified in bold).

Although they are recognized as being widely under-consumed, milk products are nonetheless the most important contributor of potassium intake, contributing approximately 1/4 of potassium intake among Canadian adults, and 1/2 of potassium intake among Canadian children.<sup>79</sup> They also contribute approximately 54% of calcium intake, 43% of vitamin D intake, 29% of vitamin A intake, 18% of zinc intake and 12% of magnesium intake.<sup>80</sup>

Given the evidence supporting milk products’ role in reducing the risk of NCDs, their significant contribution to addressing short-fall nutrients, and the on-going decline in their consumption, any proposed nutrition policy should ensure that milk product consumption is supported and encouraged. Unfortunately, the proposal for FOP labelling would only worsen the problem of under-consumption, as people could hesitate to pick a product with a label on it or eat less of it, despite any health benefits it might have.

#### Milk Products and Musculoskeletal Health

Milk, cheese and yogurt together contribute significantly to the promotion of bone health and prevention of musculoskeletal disease, not only because of their contribution of vitamin D, estimated to be **43% of Canadians’ intake**, but also because of their substantial contributions of many other bone and muscle health promoting nutrients. These include calcium (milk products provide 54% of Canadians’ intake), protein (18%), magnesium (12%), phosphorus (28%), and vitamin A (29%).<sup>81</sup>

A recent position statement by the National Osteoporosis Foundation of the U.S. reported good evidence to support the importance of dairy in bone health, reinforcing its role in musculoskeletal

<sup>78</sup> Health Canada. Evidence review for dietary guidance. Technical report 2015. 2016.

<sup>79</sup> Tanase CM et al. Canadians continue to consume too much sodium and not enough potassium. *Can J Public Health* 2011;102:164-168.

<sup>80</sup> Statistics Canada. 2015 Canadian community health survey – Nutrition. Specific analyses requested by DFC.

<sup>81</sup> Ibid.

health.<sup>82</sup> In addition, two recent studies, including a meta-analysis, confirm the beneficial role of milk product consumption, including milk, cheese and yogurt, in reducing the risk of hip fractures.<sup>83,84</sup>

In terms of muscle health, studies have shown that milk products are associated with maintaining optimal muscle mass and function in older adults and in preserving muscle mass in adults who are undergoing weight loss.<sup>85,86,87</sup>

It is important to highlight that musculoskeletal disease has been prioritized by Health Canada within the RIAS as one of four NCDs that together represent 52% of all-cause mortality, which must be reduced. They also note that it represents the second highest disease cost of all four conditions they identify.<sup>88</sup>

Unfortunately, despite the fact that Health Canada has prioritized reducing musculoskeletal diseases as one their stated objectives – the current FOP labelling proposal would actually worsen the situation by discouraging consumers from selecting bone-health promoting milk products.

### Vitamin D and Health

Within the RIAS, in addition to prioritizing musculoskeletal disease, Health Canada specifically recognizes that vitamin D is of significant importance to reducing the burden of this disease – and that in Canada, 20% of Canadians are currently at risk of vitamin D deficiency and 8% are deficient. Health Canada also recognizes that there are few efficient delivery systems of vitamin D – while noting specifically that milk products are among the most efficient of these few.

For these reasons, within the RIAS, Health Canada proposes enhanced fortification policies for vitamin D, including increased levels in milk and permitted fortification of yogurt at the same level as milk. As part of Phase 1 B of the Vitamin D Fortification Strategy, in addition to the fortification of yogurt, and considering milk consumption is on the decline,<sup>89</sup> **DFC encourages Health Canada to also consider prioritizing the fortification of other cultured milk products (e.g. kefir, drinkable yogurt, etc.), as well as cheese as additional vehicles for vitamin D.**

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<sup>82</sup> Weaver CM et al. The National Osteoporosis Foundation's position statement on peak bone mass development and lifestyle factors: a systematic review and implementation recommendations. *Osteoporos Int* 2016;27:1281-1386.

<sup>83</sup> Feskanich D et al. Milk and other dairy foods and risk of hip fracture in men and women. *Osteoporos Int* 2018;29(2):285-396.

<sup>84</sup> Bian S et al. Dairy products consumption and risk of hip fracture: a systematic review and meta-analysis. 2018; DOI 10.1186/s12889-018-5041-5.

<sup>85</sup> Radavelli-Bagatini S et al. Association of dairy intake with body composition and physical function in older community-dwelling women. *J Acad Nutr Diet* 2013;113:1669-1674.

<sup>86</sup> Josse AR et al. Increased consumption of dairy foods and protein during diet- and exercise-induced weight loss promotes fat mass loss and lean mass gain in overweight and obese premenopausal women. *J Nutr* 2011;141:1626-1634.

<sup>87</sup> Abargouei AS et al. Effect of dairy consumption on weight and body composition in adults: a systematic review and meta-analysis of randomized controlled clinical trials. *Int J Obes* 2012;36:1485-1493.

<sup>88</sup> Canada Gazette Part I. Regulations amending certain regulations made under the Food and Drugs Act (nutrition symbols, other labelling provisions, partially hydrogenated oils and vitamin D). 2018-02-10 Vol.152, No.6.

<sup>89</sup> Statistics Canada. 2015 Canadian community health survey – Nutrition. Specific analyses requested by DFC.

Health Canada has already granted exemptions to certain foods because *“there is scientific evidence for a protective effect on health”*, noting further, that: *“These are foods which Health Canada does not want to discourage consumption”*.

Therefore, given that:

- Reducing instances of musculoskeletal disease is one of the chief goals of this policy; and
- That vitamin D fortification has been identified as one of the best strategies to achieve this; and
- That Health Canada recognizes that fortifying milk products, including yogurt, with vitamin D is one of the most effective ways to achieve this; and
- That milk, including flavoured milk, is a source of vitamin D; and
- That along with yogurt, other cultured milk products such as kefir and yogurt drink can be fortified with vitamin D;
- That cheese, which constitutes a significant part of the average Milk and Alternatives intake, can also be fortified with vitamin D;

Any food product identified as a good vehicle for vitamin D fortification, and as having a beneficial impact on bone health, has a protective impact on health and should be encouraged.

**On this basis, flavored milk, all types of plain and flavoured yogurts and other cultured milk products, as well as cheese should also be exempt from FOP labelling, due to their important role in promoting musculoskeletal health. As part of Phase 1 B of the Vitamin D Fortification Strategy, Health Canada should also include other cultured milk products in addition to yogurt (e.g. kefir, drinkable yogurt, etc.), as well as consider prioritizing the fortification of cheese as additional vehicles for vitamin D.**

### Canada’s Concerns About FOP Labels at the World Trade Organization

Health Canada has often noted that their current proposal for FOP labelling is based on the model recently introduced by Chile. It is important to note that at numerous meetings of the WTO Trade Barriers Committee, occurring between 2013-2016, the Chilean model was heavily criticized by the international community. The countries expressing concerns about the Chilean model are numerous, and include: the United States; the European Union; Australia; Mexico; Brazil; Switzerland; Argentina; Columbia; Guatemala; Peru; Costa Rica; and, most notably, **Canada**.

Between 2013-2016, the Canadian government raised concerns about the Chilean proposal for FOP labelling at **nine** separate meetings of the WTO Trade Barriers Committee. Although some of these interactions occurred under the previous Government, **the current Government** raised concerns about Chile’s proposal **on four separate occasions following their election**, starting in November 2015 and ending in June 2016.

The concerns raised by the current Canadian Government about Chile’s proposed FOP model include, but are not limited to<sup>90</sup>:

- The regulations published by Chile “**deviated from international standards**”.
- The regulations published by Chile “**were not based on science**”.
- The regulations published by Chile “**were more trade restrictive than necessary**”.

Given these concerns, particularly that the Chilean model, which also focuses on sodium, sugar, and saturated fat, **is not based on science** – it is incomprehensible that Health Canada has elected to base the Canadian regulation on the same model as Chile.

### Issues with the Cost/Benefit Analysis

Notwithstanding the lack of supporting scientific evidence, and impacts that this flawed approach could have on the health of Canadians, this policy will also have a significant economic impact which is not adequately reflected in the RIAS.

Included within the RIAS is a “cost-benefits” analysis (CBA). Unfortunately, **in relation to FOP labelling**, Health Canada did not consult with the dairy sector, and other stakeholders, to assess the true impacts of the proposed policy regulations. This has resulted in a number of shortcomings in Health Canada’s CBA. In particular, there is no consideration of the increased healthcare costs resulting from a reduction in the consumption of dairy products. Further, significant costs were omitted from the analysis, instead being labelled as “non-quantifiable” impacts. Based on an IPSOS study, DFC was able to conduct a **preliminary estimation** of the potential impacts associated with market loss to dairy farmers’ revenues. However, these estimates were at the farm level only. Additional impacts will be incurred on the processing side, as well as in other industries. **A full assessment of the true costs of the program for affected industries, including dairy, should be undertaken under the leadership of the Health Canada.**

The CBA outlined in the RIAS is based on: (1) the projected savings to healthcare costs from a reduction in consumption of products high in sodium, saturated fats, and sugar; (2) increasing vitamin D in the food supply to help promote adequate bone health; and (3) the costs associated with the implementation of a label on products (labour, printing, etc.) All other costs are identified as “non-quantifiable” impacts and are not considered in the CBA.

### Benefits

The “benefits” considered in the CBA are calculated and quantified based on an assumption that FOP labels and changes in vitamin D fortification regulations would result in a 1.5% improvement in four NCDs: cardiovascular disease, malignant neoplasm (cancer), diabetes mellitus, and musculoskeletal disease. This rate of improvement was applied to annual healthcare expenditures to get an estimate of the total healthcare costs savings, projected at \$3.19 Billion over 10 years; however it is unclear how the 1.5% rate was determined.

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<sup>90</sup> WTO Trade Barriers Committee Meeting Minutes of 4-6 November, 2015.

### Impact on Healthcare Costs

An important consideration ignored by Health Canada's CBA is the impact FOP labelling will have on the overall consumption of milk products, which, as previously noted, the totality of the highest quality scientific evidence clearly demonstrates would improve the very conditions whose prevalence the policy aims to reduce. As previously outlined, according to Health Canada's 2015 Evidence Review for Dietary Guidance<sup>91</sup>, milk and dairy products are associated with a **reduced risk** of colorectal cancer, cardiovascular disease, coronary heart disease, stroke, high blood pressure, type 2 diabetes, and have a beneficial impact on bone health.

Furthermore, in an article published in the *American Journal of Hypertension*, McCarron and Heaney explored the cost *savings* associated with increased consumption of dairy products, and the associated reduction in the prevalence of NCDs, including, "obesity, hypertension, type 2 diabetes, osteoporosis, kidney stones, certain outcomes of pregnancy, and some cancers" in the United States. Again, it is important to note that these are some of the very conditions targeted by Health Canada's proposed regulations. The authors quantified the impacts associated with increasing dairy consumption in the US to the recommended 3 to 4 servings of dairy products per day, using annual US data on the expenditure on each of the conditions mentioned. The savings to healthcare costs associated with the increase in consumption was estimated at \$26 billion USD (approx. \$33.8 billion CAD) in year 1 alone.<sup>92</sup>

As outlined previously, a recent position statement by the National Osteoporosis Foundation of the U.S. reported good evidence supporting the importance of dairy in bone health, reinforcing its role in musculoskeletal health.<sup>93</sup> In addition, two recent studies, including a meta-analysis, confirm the beneficial role of milk product consumption, including milk, cheese and yogurt, in reducing the risk of hip fractures.<sup>94,95</sup>

According to the Canadian Institute for Health Information (CIHI) 2014 annual report, 2012-2013 saw a 19.2% increase in hospitalization for hip and knee replacements in Canada compared to 2008-2009.<sup>96</sup> The total 'in-hospital' costs associated with the hip and knee replacements in Canada for 2012-2013 alone was estimated to be **\$963 million**. This represents another financial burden on the Canadian healthcare system that could be mitigated through increased dairy consumption. On the other hand, imposing a FOP label on dairy products will reduce consumption of these products.

Given the evidence supporting milk products' role in reducing the risk of NCDs, their significant contribution to addressing short-fall nutrients, and the ongoing decline in consumption, any proposed nutrition policy should support and encourage the consumption of milk products. Unfortunately, the current proposal for FOP labelling will be detrimental to the consumption of milk products, which may exacerbate the financial burden associated with cardiovascular disease, type 2 diabetes, cancer and

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<sup>91</sup> Health Canada. Evidence review for dietary guidance. Technical report 2015. 2016.

<sup>92</sup> David A. McCarron, Robert P. Heaney. Estimated healthcare savings associated with adequate dairy food intake. *American Journal of Hypertension*, Volume 17, Issue 1, 1 January 2004, Pages 88–97.

<sup>93</sup> Weaver CM et al. The National Osteoporosis Foundation's position statement on peak bone mass development and lifestyle factors: a systematic review and implementation recommendations. *Osteoporos Int* 2016;27:1281-1386.

<sup>94</sup> Feskanich D et al. Milk and other dairy foods and risk of hip fracture in men and women. *Osteoporos Int* 2018;29(2):285-396.

<sup>95</sup> Bian S et al. Dairy products consumption and risk of hip fracture: a systematic review and meta-analysis. 2018; DOI 10.1186/s12889-018-5041-5.

<sup>96</sup> Canadian Institute for Health Information. Hip and Knee Replacements in Canada: Canadian Joint Replacement Registry 2014 Annual Report. 2014.

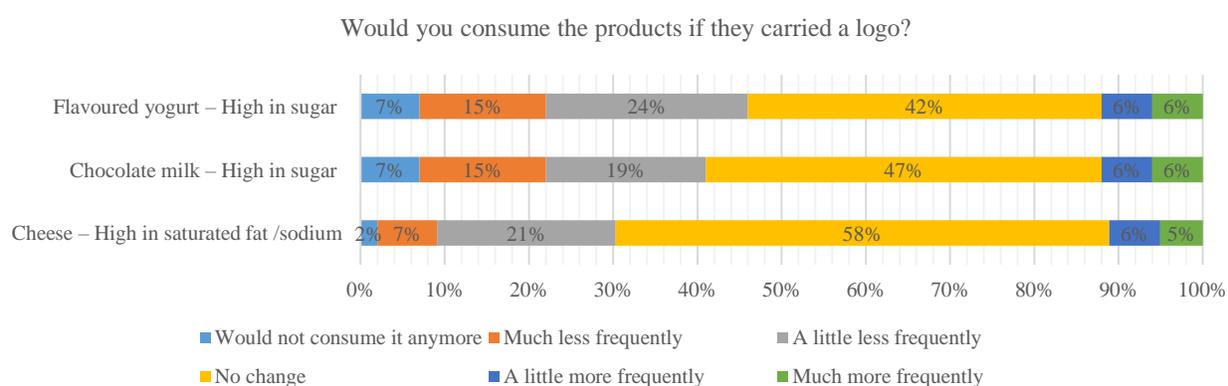
musculoskeletal disease. These costs should be included in any assessment undertaken by Health Canada.

### Impact of FOP Labels on Consumption Habits

Applying a FOP label on up to 89% of dairy SKUs will result in reduced consumption of dairy products. A recent study conducted by IPSOS Research found that some consumers will avoid or consume less of a milk product if it contains a FOP label, such as those proposed by Health Canada.

The study specifically found that when participants were informed of the initiative behind the FOP policy, a third to nearly 50% of consumers would reduce or stop their consumption of dairy products “sanctioned” by a logo. Results are found in Figure 1.

Figure 1: IPSOS Study Results



Source: Ipsos (2017). Health Canada Initiative’s (Logo FOP) Impact on the Consumption of Dairy Products, June 2017

In addition, respondents who indicated that they would reduce or stop their consumption of the identified products were asked which substitute products they would consume instead. 80% of these respondents noted that for cheese, if its package had an FOP label, they would reduce or simply avoid the product without replacing it (see Table 2).

### Costs

Unlike the 10-year projection made within the benefits analysis, the RIAS’ CBA considers only costs associated with the one-time implementation of the FOP label on products, pegged by Health Canada at \$836.05 million. All other costs, most notably, the impact to market loss associated with a reduced consumption of affected products are simply identified as ‘non-quantifiable’. This is simply not the case.

DFC conducted a preliminary analysis to quantify the impacts using the results of the IPSOS study described above, which looked at the potential change in consumption habits as a result of introducing proposed FOP labels to dairy products.

The outcome of our estimate is a loss of between **\$168 million to \$212 million annually to dairy producers’ revenues** alone. Even as a preliminary estimate, the results show that these impacts can, in fact, be quantified. Omitting such significant amounts from the CBA results in an analysis that does not properly assess the true impacts of the proposed regulation.

#### DFC Methodology

The IPSOS study identified the percentage of consumers who would completely avoid a product, consume it less frequently, a little less frequently or substitute the product for another dairy product.

The following percentage changes were applied to consumption figures for each scenario, to estimate the economic impacts:

*Table 1: Percentage change to consumption based on DFC Assumptions*

<b>Scenario</b>	<b>Assumed change to consumption</b>
Would not consume it anymore	-100%
Consume much less frequently	-33%
Consume a little less frequently	-10%

The survey asked consumers about their consumption of flavoured yogurt, cheese and chocolate milk. DFC's analysis applies the results of each, to other dairy products with similar composition to estimate impacts (see table 2).

Table 2: Consumption Change Applied per Dairy Product

Dairy Products	Impact to Consumption	Dairy Products	Impact to Consumption	Dairy Products	Impact to Consumption
Chocolate and a/o flavoured milk (1)	7% would not consume it anymore 15% much less frequently (33% less*) 19% a little less frequently (10% less*) <b>43% substitution toward other dairy products</b>	Natural cheese	2% would not consume it anymore 7% much less frequently (33% less*) 21% a little less frequently (10% less*) <b>0% substitution toward other dairy products</b>	Frozen yogurt (4)	7% would not consume it anymore 15% much less frequently (33% less*) 24% a little less frequently (10% less*) <b>79% substitution toward other dairy products</b>
≥10% M.F. cream (2)	2% would not consume it anymore 7% much less frequently (33% less*) 21% a little less frequently (10% less*) <b>0% substitution toward other dairy products</b>	Processed cheese	2% would not consume it anymore 7% much less frequently (33% less*) 21% a little less frequently (10% less*) <b>0% substitution toward other dairy products</b>	Ice cream (4)	7% would not consume it anymore 15% much less frequently (33% less*) 24% a little less frequently (10% less*) <b>79% substitution toward other dairy products</b>
Butter (2)	2% would not consume it anymore 7% much less frequently (33% less*) 21% a little less frequently (10% less*) <b>0% substitution toward other dairy products</b>	Refrigerated flavoured yogurt (3)	7% would not consume it anymore 15% much less frequently (33% less*) 24% a little less frequently (10% less*) <b>79% substitution toward other dairy products</b>		

\*DFC's assumption

Based on the results of the IPSOS study and DFC assumptions, FOP labelling, as currently proposed, will result in reduced consumption of dairy products, resulting in a loss of **\$168 million annually to Canadian dairy farmers' revenues** due to loss of milk sales (See Table 3). This figure considers potential substitution effect between dairy products, as outlined in Table 2 above. If we assume no substitution, the impact would be **\$212 million annually to Canadian dairy farmers' revenues** due to loss of milk sales.

*Table 3: Economic Impacts of FOP Labelling to Canadian Dairy Farmers Based on IPSOS Study*

Products	Farmgate Raw Milk hl	Farm Cash Receipt
Chocolate and a/o flavoured milk	-53,126	-\$9,245,443
≥10% M.F. cream	-268,719	-\$14,976,494
Butter	-793,294	-\$39,255,973
Natural cheese	-1,087,721	-\$87,300,700
Processed cheese	-174,596	-\$7,801,056
Refrigerated flavoured yogurt	-40,622	-\$5,316,521
Frozen yogurt	-4,167	-\$947,121
Ice cream	-52,210	-\$3,410,426
<b>Total</b>	<b>-2,474,454</b>	<b>-\$168,253,735</b>
<b>Percentage change</b>	<b>▼ 2.8%</b>	<b>▼ 2.4%</b>

DFC considers that the costs that the Government has deemed “non-quantifiable” are likely to be significantly higher and more impactful over time than the calculated one-time compliance fee, and that an accounting of these costs is essential in any projection of the impact of this policy.

**DFC requests that Health Canada conduct a thorough consultation with all relevant stakeholders, including the dairy sector, and compile all available data in order to complete a more thorough analysis of the impacts of the proposed FOP Labelling policy, to be included in a revised RIAS.**

## Conclusion

When it comes to reducing chronic NCDs, current scientific evidence emphasizes the importance for dietary guidance to be based on foods rather than focused on nutrients to limit (sodium, sugars and saturated fat) because the food matrix has a major impact on the ability of these nutrients to affect health. This is especially true in the case of milk products. Furthermore, strong evidence shows that when it comes to reducing the risk of NCDs like cardiovascular disease, type 2 diabetes, certain cancers and musculoskeletal disease, nutritious milk products, even those containing sodium, saturated fats and

sugars, are part of the solution. Therefore, the consumption of milk products should be encouraged rather than discouraged, especially considering that the under-consumption of Milk and Alternatives has worsened over the past decade.

The proposed FOP labelling policy suffers from a critical lack of nuance. By ignoring the evidence and focusing solely on sodium, sugar, and saturated fat as the determinant of the overall healthfulness of a food, foods such as yogurt and cheese, which we know are rich in many essential nutrients, including vitamin A (cheese), magnesium (yogurt), potassium (yogurt), zinc and calcium (cheese and yogurt), would require a warning label, while snack foods, such as **most potato chips and all diet sodas, would not.**

Any policy framework that suggests by omission that potato chips and diet sodas are “healthier” than nutrient-rich foods is flawed, and could lead Canadians to make unhealthy choices.

Moving forward with this biased approach to policy-making without taking into account the best available evidence is not responsible. It is critical that Health Canada be inclusive of **all available scientific evidence** when it comes to the continued development of any FOP labelling regulations. If it is not possible to inject the appropriate nuance distinguishing between nutrient-dense and nutrient-deficient foods into this policy, **Health Canada must re-think its approach.**

Finally, notwithstanding the lack of supporting scientific evidence, and impacts that this flawed approach could have on the health of Canadians, the cost-benefit analysis included in the RIAS for FOP labelling does not include a true accounting of the costs of this policy. This is not acceptable. It is imperative that **Health Canada commit to undertaking a consultation with all relevant stakeholders, including the dairy sector, to ensure a thorough analysis of the impact of this policy is conducted before moving forward.**

### Exemptions

A holistic review of the scientific evidence does not support Health Canada’s approach in isolating sodium, sugar, and saturated fats – while ignoring the numerous benefits of nutritious milk products. Moreover, given that:

- Total saturated fat intake is not associated with increased in CVD or CHD; and
- That saturated fat derived from dairy have been associated with reduced CVD risk; and
- That based on the totality of the strongest available scientific evidence, there is no rationale for targeting saturated fat, **especially those found in dairy products**, as a nutrient of concern for Canadians; and
- That there is no evidence linking naturally occurring intrinsic sugars with harmful health effects.
- That there is no rationale for targeting total sugars as a nutrient of concern for Canadians, or nutrient rich foods that contain added sugar; and
- That salt (sodium chloride) is an integral part of the cheese-making process, and is essential for controlling moisture content and **ensuring safety**; and
- That with an average consumption of 3,400 mg of sodium per day, Canadians’ sodium intake is currently optimal according to the sum of the most current scientific evidence; and

- That current evidence does not support that reducing sodium intake to less than 3,000 mg per day is effective or safe;

Health Canada must reconsider its emphasis on each of these target nutrients, and ensure that the complex relationship between nutritious dairy products and these nutrients is reflected in this policy.

However, if Health Canada is intent on moving forward with this policy as it is currently constructed, they must grant exemptions for nutritious milk products. Health Canada has already granted exemptions to certain foods because *“there is scientific evidence for a protective effect on health”*, noting further that *“These are foods which Health Canada does not want to discourage consumption”*.

Therefore, given that:

- Milk products are associated with a reduced risk of cardiovascular disease, hypertension, stroke, type 2 diabetes, colorectal cancer, and musculoskeletal disease; and,
- That these diseases are among those prioritized by this policy; and,
- That Health Canada recognizes that Canadians do not consume enough of the following eight nutrients: vitamin D, calcium, magnesium, zinc, potassium, vitamin A, vitamin C and fibre; and,
- That up to six of these (vitamin D, calcium, magnesium, zinc, potassium, vitamin A) are found in milk and milk products; and
- That reducing instances of musculoskeletal disease is one of the chief goals of this policy; and,
- That due to the nutrients they contain, milk, cheese, yogurt and other cultured milk products together contribute significantly to the promotion of bone health and prevention of musculoskeletal disease; and,
- That Health Canada prioritizes combatting vitamin D deficiency within this policy; and,
- That Health Canada recognizes that fortifying milk products, including yogurt, with vitamin D is one of the most effective ways to achieve this; and
- That milk, including flavoured milk, is a source of vitamin D; and
- That along with yogurt, other cultured milk products such as kefir and yogurt drink can be fortified with vitamin D; and
- That cheese can also be fortified with vitamin D;

Health Canada must acknowledge that, in addition to 2% and whole milk, broad exemptions should be granted to other nutritious milk products, including **flavoured milk, all types of yogurts and other cultured milk products, as well as cheese, due to their protective impacts on health.**

DFC supports Health Canada’s overall goal to help Canadians make the informed, healthier choice. The current proposal for FOP labelling will not only confuse Canadians about the overall healthfulness of a food – it could lead to them making unhealthy choices. It is imperative that Health Canada take the necessary time to rethink this flawed policy.

## Appendix A

Visual	Name	Serving Size	Saturated Fat	Sodium	Sugar
	Chips, Miss Vickie's, Original Recipe	50 g	1.5 g	210 mg	0 g
	Chips, Sour Cream and Onion, Ruffles	50 g	1.5 g	340 mg	3 g
	Doritos, Jalapeno & Cheddar	50 g	2 g	330 mg	1 g
	Potato Chips, Kettle, Sea Salt Vinegar	50 g	1.88 g	338 mg	0 g
	Tostitos, Rounds	50 g	1.5 g	200 mg	0 g
	Sweet and Salty Kettle Corn	50 g	1 g	230 mg	12 g
	Diet Coke	375 mL	0 g	42 mg	0 g
	Vitamin Water, Zero, Rise (calcium), orange	1 bottle of 591 mL	0 g	0 mg	0 g
	Social Tea Biscuits, Mr. Christie's	55 g	1.77 g	213 mg	12 g
	Bear Paws, Soft cookies, Molasses	50 g	1.67 g	178 mg	14 g

Visual	Name	Serving Size	Saturated Fat	Sodium	Sugar
	Kellogg's, Corn Flakes	50 g	0 g	328 mg	5 g
	Kellogg's, Rice Krispies	50 g	0 g	250 mg	5 g
	Chocolate Pudding, No sugar added, Snack Pack	130 g	2 g	151 mg	1 g
	Shoestring Fries, McCain	85 g	0.3 g	90 mg	0 g
	Rice Cakes, Caramel Corn	50 g	0 g	96 mg	12 g
	Stouffers, Meatloaf	300 g	5.1 g	570 mg	6 g
	Wonder White Bread	75 g	0.5 g	300 mg	3 g
	Vanilla almond beverage, shelf stable, Blue Diamond	250 mL	0.2 g	150 mg	12 g
	Doritos, Nacho Cheese	50 g	1.8 g	<b>375 mg*</b>	0 g
	White Bread, Gadoua	80 g	0.5 g	<b>390 mg*</b>	4 g
	Macaroni & Cheese, Original, Prepared, Kraft Dinner (1 cup	300 g	2.4 g	<b>736 mg*</b>	14 g

Visual	Name	Serving Size	Saturated Fat	Sodium	Sugar
	and a half prepared)				
	Pop Tarts, Frosted Raspberry Flavour, Kellogg's (1 pastry)	50 g	1.5 g	160 mg	<b>16 g*</b>
	Crispers, Salt & Vinegar	50 g	2.5 g	<b>375 mg*</b>	3 g
	Crackers, Breton, Cheddar Bites	50 g	2.5 g	<b>350 mg*</b>	3 g
	Cheerios, Flavoured with Real Cocoa	50 g	0.7 g	276 mg	<b>16 g*</b>
	Stouffers, Beef Pot Roast	300 g	3.6 g	<b>737 mg*</b>	4 g
	Swanson, Fried Chicken with a Brownie	300 g	4.8 g	<b>793 mg*</b>	18 g
	P'tit Quebec, Cheddar, marble	50 g	<b>12 g*</b>	<b>350 mg*</b>	0 g
	P'tit Quebec, Cheddar, Very mild, light, 36% less fat than regular cheddar cheese	50 g	<b>7.5 g*</b>	<b>350 mg*</b>	0 g
	P'tit Quebec, Mozzarella	50 g	<b>8 g*</b>	<b>400 mg*</b>	0 g
	P'tit Quebec, Mozzarella, Part Skim	50 g	<b>6 g*</b>	<b>400 mg*</b>	0 g
	Low Fat Cottage Cheese, 1%, Natrel	125 g	0.5 g	<b>390 mg*</b>	7 g

Visual	Name	Serving Size	Saturated Fat	Sodium	Sugar
	Chocolate Milk, Quebon, 1% M.F.	250 mL	1.5 g	180 mg	25 g*
	iögo Strawberry Yogurt 1.5%	175 g	1.5 g	85 mg	24 g*
	Plain Yogurt, Damafro, 3.25% M.F.	175 g	3.5 g*	65 mg	4 g
	Bolthouse Farms, Carrot Juice, individual bottle 450 mL	450 mL	0.1 g	310 mg	24 g*
	Orchard Peach, In light fruit juice syrup, Del Monte	167 mL	0 g	0 g	27 g*

\* FOP for this nutrient

**Legend:**

- Green section: Foods with no FOP
- Yellow section: Foods that are just above one of the threshold that may be easy to reformulate
- Red section: Nutritious foods that will have to carry a FOP and that will be challenging to reformulate.

## Appendix B

*Share in Percentage of SKUs with a FOP Labelling*

Products	Scenario		
	SKUs	FOP SKUs	FOP %
Butter	364	364	100%
Cheese	11,621	11,577	99%
Cream	586	537	92%
Frozen yogurt	358	357	99%
Ice cream	2,622	2,622	100%
Ice milk	48	48	100%
Milk	2,505	663	26%
Yogurt	3,887	3,410	88%
<b>Total</b>	<b>21,991</b>	<b>19,269</b>	<b>89%</b>