

What Does the Re-vamp of the Canadian Food Guide Mean for Dairy?

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■ Take Home Messages

- ▶ Health Canada is currently developing the Healthy Eating Strategy (HES) which includes revamping the Canada's Food Guide (CFG) and front-of-pack (FOP) nutrition labelling.
- ▶ The new CFG will likely encourage more plant-based food consumption and FOP labelling will focus on reducing intakes of sugars, sodium and saturated fats.
- ▶ Dietary advice should emphasize whole foods and dietary patterns and move away from the current individual nutrient focus.
- ▶ It is expected that dairy will remain a part of dietary guidance in Canada.

The Healthy Eating Strategy (HES) and other food policy initiatives currently being developed by Health Canada and Agriculture and Agri-Food Canada may dramatically change food guidance in Canada. These initiatives, particularly the HES, are intended to improve the food environment and encourage our population to consume a healthier diet. While the HES may positively impact the quality of foods produced, processed and consumed in Canada, it also has the potential to affect the agri-food system, including dairy production and consumption.

The HES is made up of several initiatives, including revamping of Canada's Food Guide (CFG) and food labelling updates. Both of these policies have undergone public consultation and initial proposal stages, and plan to be finalized and implemented by 2021. The labelling changes have a strong focus on "negative" nutrients (sugars, sodium and saturated fats) and the CFG consultations have endorsed encouraging Canadians to choose more plant and fewer animal based foods.

Milk and dairy products have been an integral contributor to the nourishment of populations around the world for over 7,500 years, and should continue to

be (Itan, 2009). Dairy products contain many important nutrients that contribute to human health including high quality protein, vitamins and minerals. Dairy has an established positive role in human health, including reducing risk of chronic diseases (osteoporosis, heart disease, diabetes, stroke and obesity) and regulating body weight and blood glucose response. Yet its contribution of saturated fat, a “negative” nutrient, and environmental impact are frequently raised as reasons to reduce dairy consumption and to encourage plant-based alternatives. So where dairy will fit into the CFG is uncertain, but we predict it will be included. Health Canada has emphasized that food policies need to be evidence based. With that in mind, we expect that dairy will continue to be encouraged in a healthy dietary pattern, despite the HES emphasis on reducing animal based foods, sugars and saturated fat.

■ The Healthy Eating Strategy

The Healthy Eating Strategy (HES), led by Health Canada, was prompted by Prime Minister Trudeau’s mandate letter to then Health Minister Dr. Jane Philpott in November 2015. In this published letter there was a call for action on several food and nutrition policies including restricting marketing of unhealthy foods and beverages to children, eliminating trans fat and reducing salt (sodium) in processed foods, and providing more information to consumers on added sugars. The prioritization of these issues was also influenced by advocacy groups and consumers. Health Canada has been working tirelessly since receiving these mandates and has developed the Healthy Eating Strategy, part of the larger vision for a healthy Canada, which includes Healthy Living and Healthy Mind initiatives.

The healthy eating strategy has five main policy initiatives:

1. **Revising Canada’s Food Guide (CFG)**
2. Restricting marketing of unhealthy foods and beverages to children, with a focus on foods high in sugars, sodium and saturated fats.
3. Strengthening food labelling through changes to the nutrition facts table and ingredients list (completed in 2016, enforced in 2021) and the introduction of **front-of-pack (FOP) nutrition labelling, focused on sugars, sodium and saturated fats.**
4. Banning industrially produced (excludes dairy) trans fat in foods (completed in 2017, enforced in fall 2018) and reducing sodium in packaged and restaurant foods.
5. Expansion of the Nutrition North Canada program, increasing access and availability of nutritious foods in isolated northern communities.

Revisions of Canada's Food Guide

Health Canada began the evidence review for dietary guidance in 2013, a cyclical process involving three main steps to examine evidence: (1) the scientific basis of the evidence including relationships between health and foods, (2) the Canadian context including characteristics of the Canadian population and eating behaviours, and (3) use of existing guidance. A report was published in 2016 (Health Canada, 2016a) from this evidence review highlighting several key relationships between food intake and health. The relationships with the strongest evidence included: sodium and risk of high blood pressure; trans fat and risk of cardiovascular disease; dietary patterns with high intake of vegetables, fruits, whole grains, seafood and low-fat dairy; patterns with low intake of red and processed meats, refined grains, sugar sweetened beverages (SSB), and foods with positive cardiovascular disease outcomes. Several diet-health relationships were identified as needing further evidence including replacing saturated fat with unsaturated fat to reduce cardiovascular disease and type 2 diabetes risk, red and processed meat intake and colorectal cancer, soy protein intake and lowering blood cholesterol, and added sugar intake (particularly SSB) and obesity and type 2 diabetes risk. Other findings from the review include challenges with consumer understanding of certain aspects of dietary guidance including food guide servings, and the current CFG format not meeting the needs of all audiences.

Health Canada conducted open consultation in fall of 2016 to collect information on the needs and expectations of stakeholders and Canadians for the new CFG. This was followed up with an online stakeholder discussion and focus groups in spring 2017. Guiding principles and recommendations for healthy eating were published in summer 2017 and a second open consultation was conducted to gather feedback on the proposed recommendations. The three guiding principles are:

1. A variety of nutritious foods and beverages are the foundation for healthy eating. This includes eating vegetables, fruit, whole grains and protein-rich foods (especially plant-based sources of protein), the inclusion of foods that contain mostly unsaturated fat instead of saturated fats, and regular intake of water.
2. Processed or prepared foods and beverages high in sodium, sugars or saturated fat undermine healthy eating. Limit intake of processed/prepared foods high in these nutrients and avoid processed/prepared beverages high in sugars.
3. Knowledge and skills are needed to navigate the complex food environment and support healthy eating. Select nutritious foods when shopping or eating out, plan and prepare healthy meals and snacks, and share meals with family and friends whenever possible.

The continued development of the CFG will occur in two phases. Phase 1 (2018) will be a report for health professionals and policy makers consisting of general eating recommendations and supporting key messages and resources. Phase 2 (2019) will be a report on healthy eating patterns, including the amounts and types of foods, and additional resources.

Front-of-Package (FOP) Nutrition Labelling

FOP nutrition labelling is information located on the front of packaged foods to provide consumers with simple, easily accessible information about the nutrients in the product. These can include simple summary grades or symbols (star rating, NuVal scores, healthy choices check, Nordic keyhole), nutrient specific systems (source of a nutrient, facts up front, 'high in' stop signs) or food group specific symbols (whole grain, fruits and vegetables). As part of the HES, Health Canada has proposed mandatory FOP labelling on packaged foods. A proposal was released by Health Canada in November 2016 followed by an open consultation and public opinion research. The proposed FOP system focuses exclusively on sugars, sodium and saturated fat, requiring a 'high in' symbol on packaged foods that exceed the proposed threshold for each nutrient. This threshold is set at 15% of the daily value (345 mg sodium, 3 g saturated fat and 15 g total sugar) per reference amount and serving size. As this policy will have significant impacts on the food landscape in Canada, Health Canada hosted a stakeholder meeting in September 2017 to review evidence and explore options for the FOP system. It is expected the next proposal and open consultation on FOP labelling will occur in early 2018.

■ Dairy and Dietary Guidance in Canada

Policies stemming from the HES will be long lasting and could dramatically change the food landscape in Canada. Health Canada has established a rigorous roadmap for collecting and evaluating scientific evidence to support its policy decisions and has indicated a commitment to using the most recent and best available evidence throughout their HES platform. For dairy, this is good news. As highlighted briefly in the following, and reviewed extensively elsewhere (Thorning, 2016), dairy has an established positive impact on human health, particularly in reducing the risk of many chronic diseases targeted in the HES, including heart disease and diabetes. It would be inconsistent with the HES to eliminate dairy from the CFG or provide guidance to reduce dairy consumption.

Health Canada acknowledged the strong scientific support for low-fat dairy as part of a healthy dietary pattern (along with vegetables, fruit, whole grains and seafood, and reducing red and processed meat, refined grains and SSBs) to improve cardiovascular disease outcomes in their evidence review report in 2016 (Health Canada, 2016a). The guiding principles published in 2017 do

not explicitly include dairy and seafood in the foundation for healthy eating (but do include vegetables, fruit and whole grains) and opted instead for 'protein-rich foods', with an emphasis on plant-based sources. It is expected that this recommendation to consume more plant based foods and reduce animal based foods will be included in the revamped CFG. This guidance is already reflected in the infographic 'Let's Eat Healthy Canada!' published in 2017 which promotes plant-based proteins, including legumes, nuts and seeds. One approach Health Canada may use for the new CFG is a 'protein' food group opposed to the current 'meat and alternatives' food group. This group could have subcategories and additional messaging on preferred protein sources that would span both plant and animal-based foods. An important consideration when promoting plant-based products is the potential for consumers to substitute plant-based milk beverages for dairy assuming they have equivalent nutritional value (see below fortification section). The evidence for equality is not convincing, and indeed, recent reports on the effect of consuming the plant based substitutes by children shows a dose-dependent negative effect on height (Morency, 2017). In this study, for every cup of non-cow milk consumed per day children were 0.4 cm shorter. Thus, the present evidence supports the continued inclusion of dairy as a healthy source of high quality protein, vitamins, minerals and fats, which is readily accessible, economical and sustainable compared to some other animal-based protein sources.

The proposal for mandatory FOP nutrition labeling on packaged food may have an impact on certain dairy products. As mentioned previously, milk and dairy products may contain added sugars (mainly sucrose), and are naturally relatively high in sodium and saturated fat. For some, these levels exceed the proposed nutrients thresholds and may require the FOP warning symbol on packaging. However, in the 2016 FOP proposal certain types of foods were exempt from the policy (Health Canada, 2016b). This exemption currently applies to foods consistent with Canadian dietary guidance (including 2% milk), foods always exempt from nutrition labeling (including dairy in refillable glass containers), and foods conditionally exempt from labeling (including those made and sold in retail settings, farmers markets and roadside stands). The exemption for 'foods consistent with Canadian dietary guidance' may be impacted by the concurrent revamping of the CFG. A webinar hosted by Health Canada in December 2016 indicated that these exemptions are still being fine-tuned and there would be consideration for other foods if met with supporting evidence. The table below highlights some dairy products and the requirement for FOP labelling based on the current policy proposal. Overall, it is expected that many dairy products will be impacted by FOP labelling despite their many health benefits.

| Product | FOP for Sugars | FOP for Saturated Fat | FOP for Sodium |
|--------------------------------|---------------------|-----------------------|----------------|
| Unsweetened Skim Milk (250ml) | No (13.4 g) | No (1.6 g) | No (113 mg) |
| Unsweetened 2% Milk (250ml) | No (13.05 g) | EXEMPT (3.2 g) | No (121 mg) |
| Whole Milk (250ml) | No (13.02 g) | Yes (4.8 g) | No (111 mg) |
| 1% Chocolate Milk (250ml) | Yes (26 g) | No (1.6 g) | No (161 mg) |
| Fruit Flavoured Yogurt (175 g) | Yes (24.2 g) | Yes (3.5 g) | No (93 mg) |
| Plain Yogurt (175 g) | No (6.4 g) | No (2.4 g) | No (74 mg) |
| Plain Greek Yogurt (175 g) | No (6 g) | No (2 g) | No (90 mg) |
| Low-fat Cheddar Cheese (30 g) | No (0.1 g) | Yes (3.8 g) | No (239 mg) |
| Full-fat Cheddar Cheese (30 g) | No (0.1 g) | Yes (6.4 g) | No (212 mg) |
| Low-fat Ice Cream (125 ml) | No (14.5 g) | No (1 g) | No (54 mg) |
| Full-fat Ice Cream (125 ml) | Yes (17.7 g) | Yes (4.7 g) | No (53 mg) |

* Nutrient values obtained from Canadian Nutrient File (Government of Canada, 2016)

The Silver Lining

While some elements of the HES may be concerning for dairy, namely the focus on reducing sugars, saturated fats and animal-based protein sources, we believe dairy will continue to be recommended as part of a healthy diet. There is strong evidence linking dairy to reduced chronic disease risk and improved disease outcomes which cannot be dismissed. Health Canada has already recognized this by proposing an exemption of low-fat dairy from mandatory FOP labelling. Additionally Health Canada's Director General of Nutrition Policy and Promotion, the office responsible for the CFG revisions, indicated that dairy would continue to be included in the new CFG (iPOLITICS, 2018).

As mentioned, Heath Canada has committed to using science-based evidence in decision making. In the following, we review briefly the evidence that must be considered.

■ Impact of Dairy Consumption on Health

Dairy foods and beverages are a diverse group of products that have been consumed by humans as part of a healthy diet for many years. From birth humans rely on dairy in the form of breast milk or infant formula as the sole source of nourishment. After weening, dairy continues to play an important role in providing calories and important macro and micronutrients needed for development throughout life stages. The importance of dairy in our diets throughout history is no surprise when its composition and nutritional profile is examined.

Composition of Dairy

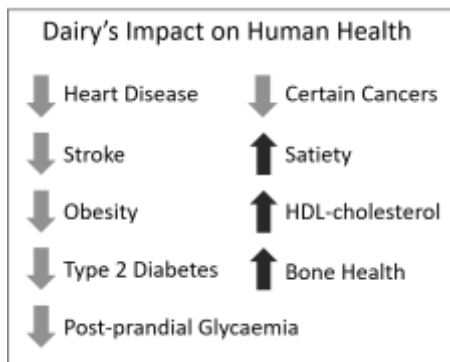
The role of dairy in providing essential nutrients has been the basis for its inclusion in the CFG since its inception. Overall dairy products are an

important source of minerals (calcium, phosphorous, potassium, magnesium, zinc, and selenium), water-soluble vitamins (B-complex and C) and fat-soluble vitamins (A, D, E), high quality proteins (casein and whey), and a unique mixture of fatty acids. Dairy products also contain nutrients that are currently considered a potential detriment to health, including added sugars, sodium, and saturated fats. Although dairy is a source of trans fat, it is chemically different than industrially produced trans fats and associated with health benefits. In addition to the essential vitamins and minerals in dairy, the unique protein and fat make-up of milk may infer additional human health benefits. The casein and whey proteins found in milk not only provide essential amino acids but also have functional properties that regulate physiological functions. The proteins and bioactive peptides (BAP) and amino acids released from them have a variety of positive physiological effects (Anderson, 2011; Haque, 2008). BAPs are also found in milk fat in the form of conjugated linoleic acids (Molkentin, 2000). The atypical fatty acid profile of dairy (short- and medium-chain monounsaturated and branch-chain fatty acids, palmitic, stearic, monounsaturated oleic, pentadecanoic and heptadecanoic acids) also infer positive physiological responses, including increasing ‘good cholesterol’ (high density lipoprotein, HDL) and reducing risk of type 2 diabetes and insulin resistance (Mozaffarian, 2010).

Dairy and Chronic Disease

Research in the past 20 years has led to an appreciation of its value in the prevention and management of chronic disease, as well as providing essential nutrients (Thorning, 2016). Canadians are currently battling high rates of obesity, type 2 diabetes, heart disease, stroke and cancers. Our diets play an important role in our health, and changes in our food intake patterns can be a first line of defence and treatment to reduce risk and combat many of these diseases. Dairy has potential to play a greater role.

The graphic below briefly outlines the impact of dairy consumption on a variety of diseases.



Dairy's Role in Weight and Blood Glucose Management

Consumption of dairy, particularly high-fat dairy, is linked to a lower risk of overweight and obesity (Rautiainen, 2016; Stonehouse, 2016). Weight loss diets that included dairy products resulted in greater weight loss and reduction in waist circumference while also retaining a greater amount of lean body weight compared to weight loss diets without dairy (Abargouei, 2012). This may be a by-product of dairy protein and fat stimulating a decrease in appetite, thus assisting individuals to adhere to weight loss program. Milk and dairy products (yogurts and cheeses) are known to suppress appetite and reduce food intake in subsequent meals (Akhavan, 2010; Anderson, 2011). The proteins they contain stimulate an appetite suppressing mechanism during and following consumption, while fat has a sustaining effect post consumption. Dairy also has a beneficial effect on blood glucose metabolism, reducing blood glucose 'spikes' following meals (termed post prandial glycaemia - PPG) (Akhavan, 2010; Anderson, 2011). The sugar dairy contains is lactose which is low glycemic, with an impact on blood glucose that is about 50% of the equivalent amount of carbohydrates from bread. In addition, the milk protein casein slows stomach emptying and the release of lactose to the small intestine for digestion. The PPG and satiety response to whole-milk is lower than that predicted by the sum of effects of its individual macronutrient components (expected PPG when adding up the individual components of milk), emphasizing the importance of milk structure and matrix (Panahi, 2014). Thus, dairy components provide signals in the body at different times, so instead of amplifying each other, they interact with one another to provide a steady response controlled over time. Dietary guidance and food policy must consider the physiological effects of whole foods and meals beyond providing essential nutrients.

Fortification of Milk and Milk Substitutes

In Canada there is a mandatory nutrient fortification program that aims to combat nutrient deficiencies in the population by adding vitamins and minerals commonly under-consumed by Canadians to staple foods. When implementing this policy Health Canada recognized the importance of milk in the diet of Canadians and chose it as a vehicle for vitamin D fortification. This policy however does not mandatorily extend to plant-based dairy alternatives such as soy and almond milk beverages. These milk alternatives may opt to fortify, in which case they are labelled 'fortified' or 'enriched'. Consumers are often unaware of the differences in both inherent nutrients and the fortified nutrients in milk and milk substitutes, and may inadvertently be missing out on much needed vitamins, minerals and protein. Studies have now begun to show children fed plant based milk substitutes are often developing severe nutritional deficiencies, including protein-calorie malnutrition, iron-deficiency anemia, nutritional rickets (low vitamin D), hyponatremia (low sodium) and

hypocalcemia (low calcium) (Le Louer, 2014). Currently, fortified soy beverage is the only recognized milk alternative in the CFG, and has the most comparable quantity of protein to milk (Eat Right Ontario, 2017; Thorning, 2016). However, as noted earlier, dietary guidance on dairy substitutes as replacements for dairy will need to consider recent evidence that may not be suitable in the diets of children.

■ Summary

Final HES policy decisions must consider all scientific evidence, and other factors, such as economic impacts and consumer understanding. These policies should be made with a whole-of-government approach, coordinated with other ministries and groups whose jurisdiction the HES will impact – the most important for food and nutrition policy being Agriculture and Agri-Food Canada (AAFC). The policies should also aim to use the most relevant and recent Canadian data. The Canadian Community Health Survey, which provides dietary intake data integral for building nutrition and food policy was conducted in 2015. The data from that study however has not been fully assessed and published, meaning Health Canada is currently forced to rely on outdated data from 2004. As the new data will be analyzed and published in the near future, Health Canada has indicated they will wait for the release of these data to complete HES work relating to healthy eating patterns.

Our diets are only as healthy as our food supply. Health Canada and AAFC need to work together to establish nutrition and food policy that is cohesive and complementary. While there has been separation of these two groups for many years, the mandate letter given to the new Health Minister in October 2017 indicated a positive change on the horizon. In this letter there was a call for greater collaboration between Health Canada and AAFC, alignment of the HES with AAFC's food policy, and for these policy initiatives to be based on high-quality scientific evidence. Our outlook is positive. By HES and AAFC working together, the outcome is more likely to be balanced and evidence-based. One opportunity to explore is the idea of a 'Canadian Diet' which would integrate dietary guidance and our Canadian food system, including our strong dairy sector.

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