

A Narrative Review of the Free Sugar Intake Among Canadians: Metabolic Health and Oral Health Implications for Public Policy

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Abstract:

Objective(s): This study aimed to review levels and patterns of free sugar intake among Canadians, examine the dual implications for metabolic health (e.g., obesity, diabetes) and oral health (primarily dental caries), and identify evidence-based public health and policy interventions to reduce free sugar consumption. **Methods:** To synthesize current evidence, a narrative synthesis was executed by evaluating peer-reviewed articles and national reports (from PubMed, Scopus, and Google Scholar) published from 2010 to 2024 on free sugar consumption and its health impacts in Canada. **Results:** Synthesized evidence showed consistently high free sugar intake among Canadians, often exceeding the WHO recommendation of <10% of total energy. Children and adolescents were particularly high consumers. Major sources were sugary beverages, desserts, snacks, and ultra-processed foods. While men consumed higher absolute amounts, intake relative to energy was similar across genders. Key evidence showed that high consumption is linked to increased risks for dental caries, type two diabetes, and obesity. Studies indicated that targeted reductions in sugar content, especially in prepackaged foods and beverages, could yield significant public health and economic benefits. **Conclusion:** Canadians' free sugar intake remains high, primarily from sugary beverages and ultra-processed foods, with significant implications for metabolic and oral health. To address this, public health strategies must be multifaceted, focusing on product reformulation, clear front-of-package labelling, and interventions targeting key dietary sources. Policy action is essential to reduce consumption effectively and mitigate the associated chronic disease burden across the population.

Keywords: Dietary Sucrose; Sugar-Sweetened Beverages; Public Health; Health Policy; Dental Caries

Introduction

The rising consumption of free sugars among Canadians has spurred concerns due to its potential health implications, including diabetes, obesity, and cardiovascular disease. Free sugars (FS), as defined by regulatory definitions established by both the European Food Safety Authority and the World Health Organization (WHO), include sugars added during food processing as well as the non-synthetic sugars inherently present within fruit juices, concentrated syrup, and honey. The WHO's 2015 guidelines set a firm dietary threshold advising that free sugar sources contribute a maximum of 10% toward total daily caloric intake. Additionally, they proposed a more ambitious target of fewer than 5%, contingent on successfully adhering to the primary recommendation ¹. This recommendation is supported by organizations like the United Kingdom's Scientific Advisory Committee on Nutrition ². While organizations such as the American Heart Association have issued specific quantitative recommendations for limiting added sugar intake in children, several western countries, including Canada, do not currently specify a formal national upper limit for added or free sugars within their dietary guidelines, instead emphasizing overall healthy dietary patterns ³.

Concerns about high free sugar consumption in Canada are

well-founded. Recent research, such as the study by Rana et al. (2021), has highlighted the detrimental effects of excessive free sugar consumption, both at the individual and population levels. Their study found that free sugars constituted nearly two-thirds (62%) of all sugar content found within Canada's commercially packaged food sector, emphasizing the urgent need for interventions in sugar consumption ⁴. Additionally, population metrics derived from the Canadian Community Health Survey revealed a decline in total sugar consumption from 2004 to 2015, primarily due to reduced free sugar intake from soft drinks ⁵. By modelling a one-fifth decrease in free sugar consumption achieved by altering food and drink manufacturing recipes, researchers predicted an alignment with WHO recommendations; however, certain groups, especially children and adolescents, continued to exceed these limits. Consumer surveys also indicated that about half of Canadians actively limit their sugar intake ⁵.

Despite advances in understanding sugar consumption patterns and their health impacts, significant gaps remain. It is crucial to clarify the role of excessive sugar in childhood obesity and other chronic diseases among Canadian youth, where it is a well-established risk factor ⁶. A common risk factor approach underscores that reducing sugar consumption can simultaneously mitigate risks for dental problems,

obesity, diabetes, and cardiovascular conditions⁷. However, the evidence presents complexities; for instance, while some data suggest sugar from certain whole foods may accompany essential nutrients, this does not diminish the public health priority of reducing excessive free sugar intake, particularly from processed sources and beverages⁸. This priority is underscored by shifting consumption patterns, where declines in traditional sugary drinks are offset by rising intake of novel sugar-sweetened beverages like energy and sports drinks⁹. Continuous monitoring across socio-economic groups is needed to identify inequities. Therefore, addressing these gaps, including socio-economic, cultural, and environmental factors, is essential for developing holistic, evidence-based frameworks designed to mitigate the concurrent challenges of chronic overnutrition and nutrient deficiencies alongside chronic diseases linked to sugar consumption in Canada. While recent studies have illuminated these broad trends, critical evidence gaps persist that hinder targeted public health action. First, many national reports quantify total sugar but do not consistently distinguish free sugars from intrinsic sugars, limiting interpretability relative to WHO guidance. Second, existing syntheses rarely integrate oral health outcomes with broader metabolic risks, missing opportunities for joint prevention strategies based on the common-risk-factor approach. Third, disaggregated evidence on high-risk subgroups such as children by age and socioeconomically disadvantaged populations remains incomplete, as does an evaluation of how policy tools would differentially affect these groups. Therefore, to inform unified public health strategies, this narrative review addresses the gaps by: (1) focusing explicitly on free sugar intake (vs. total sugars), (2) integrating evidence on both metabolic and oral health outcomes, and (3) synthesizing findings on vulnerable subpopulations and the impact of relevant policy levers in Canada.

Methods

Search strategy

A comprehensive literature retrieval was executed across PubMed, Scopus, and Google Scholar for studies published between January 2010 and June 2024. The search strategy was built around core concepts using MeSH terms and keywords: Population: "Canada" OR "Canadian", Exposure: "Dietary Sucrose"[Mesh] OR "Sugar-Sweetened Beverages"[Mesh] OR "free sugars" OR "added sugars", Outcome: "Health" OR "Dental Caries"[Mesh] OR "Oral Health"[Mesh] OR "Diabetes Mellitus, Type 2"[Mesh] OR "Obesity"[Mesh] OR "Cardiovascular Diseases"[Mesh]. The search was not limited to these terms, but also included citation tracking. For example, PubMed search string was: ("Canada"[Mesh] OR Canada OR Canadian) AND ("Dietary Sucrose"[Mesh] OR "Sugar-Sweetened Beverages"[Mesh]

OR "free sugar" OR "added sugar") AND ("Health" OR "Dental Caries"[Mesh] OR "Oral Health" OR "Chronic Disease").

Study selection

Identifying relevant research involved an evaluation of abstracts and titles during the screening process. The study focused on research that addressed trends in sugar intake, sources of sugar consumption, free sugar intake, and initiatives aimed at reducing sugar consumption among Canadians. To establish eligibility, articles were vetted against a rigorous set of pre-established parameters: they had to be conducted in Canada, focus on either free sugar intake or total sugar consumption within the Canadian population, provide data on sugar intake patterns by age group, gender, or socioeconomic factors, contain information regarding the prevalence and health outcomes of free sugar consumption in Canada, and evaluate policy intervention. Full texts of qualifying articles were retrieved for further evaluation. Both original research studies and review articles were incorporated into the analysis to guarantee a thorough and exhaustive synthesis of the existing literature.

Data extraction and quality assessment

Relevant data points from the eligible publications were compiled and tabulated, capture coding parameters such as study design, participant demographics, free sugar intake levels, sources of sugar consumption, trends over time, and outcomes related to sugar consumption. The data were synthesized and organized according to key themes, such as sugar intake patterns, contributors to sugar consumption, changes in sugar consumption trends, and public health implications, identifying trends over time, gender-specific differences, and age-related variations in sugar intake patterns.

To ensure robust quality assessment, studies were evaluated based on their adherence to WHO and national dietary guidelines, consistency in reporting free versus total sugar intake, representativeness of diverse cohorts within the Canadian demographic (including variables such as socioeconomic bracket, biological sex, and age range), alignment with evidence on major sugar sources (e.g., sugary beverages, ultra-processed foods), and their health impacts (e.g., dental decay, obesity, nutrient trade-offs).

Data analysis and interpretation

Quantitative data on free sugar intake levels, total sugar consumption, and sources of sugars in the Canadian diet were analyzed descriptively to identify trends and patterns across different population groups. To evaluate variations across groups, a comparative assessment was conducted regarding dietary habits stratified by age, gender, and socioeconomic factors. The findings are summarized in Table 1, which provides a comprehensive overview of Canadians' free sugar consumption, emphasizing key trends, challenges, and potential solutions to the issue of excessive sugar intake.

Table 1- Summary of Key Evidence on Free Sugar Intake in Canada: Trends, Sources, and Health Implications

Key Theme	Summary of Evidence from Reviewed Literature
1. High Intake Levels	The mean estimated percentage of total energy from free sugars exceeds the World Health Organization (WHO) recommendation (<10% of energy) across the Canadian population, with more than half of adults failing to meet this guideline ^{4, 10, 11} .
2. Primary Dietary Sources	Free sugars in the Canadian diet are predominantly derived from sugar-sweetened beverages, desserts, snacks, bakery products, and ultra-processed foods. Free sugars constitute 62% of the total sugar content in prepackaged foods ^{12, 13, 14} .
3. Key Demographic Patterns	Children and adolescents consistently derive the highest percentage of energy from free sugars ^{15, 16} . Consumption patterns vary by socioeconomic status, with lower parental education associated with higher sugar-sweetened beverage intake in children ¹⁷ .
4. Documented Health Links	Elevated intake of unbound sugars demonstrates a strong correlation with increased incidence of dental decay and type 2 diabetes. It contributes significantly to the national economic burden of chronic diseases ^{2, 18, 19} .
5. Trends and Reformulation	While per capita sales of traditional sugary drinks have declined, novel sugar-sweetened beverage consumption has risen ^{9, 20} . Reformulation efforts have reduced sugar in some food categories, and modelling suggests a 20% reduction in the food supply could yield substantial health benefits ^{7, 21} .

Results

The included evidence comprised observational studies, reviews, and modelling analyses published between 2010 and 2024, primarily drawing on national Canadian dietary and health survey data ^{2, 4-15, 17-28}. All studies accounted for their respective study populations, with consistent reporting by age and sex where applicable (Table 2).

Population-level analyses consistently reported elevated levels of both total and un-bound sugar consumption across the Canadian population ^{5, 11, 14, 16}. Average total sugar consumption exceeded 100 grams per day in several national estimates, with free sugars contributing a substantial proportion of total intake ^{11, 14, 16}. Children and adolescents were identified as the highest consumers of free sugars, with consumption patterns regularly surpassing the 10% ceiling for total energy expenditure ^{4, 15, 28}, with particularly high intakes observed among teenage boys ¹⁶. Beverages were a major source of free sugars across age groups ^{14-16, 28}. Liquid delivery systems high in added sugars, specifically carbonated sodas and processed fruit juices, accounted for a large share of sugar intake among children and adolescents ^{15-17, 28}. Although per capita sales of traditional sugary drinks declined over time, more recent analyses reported increasing consumption of emerging sugar-laden options, particularly sports and energy beverages ^{9, 20}.

Analyses of dietary sources beyond beverages showed that free sugars were widely present in the Canadian food supply ¹². A majority of prepackaged foods contained free sugars, with desserts, bakery products, and sweets contributing disproportionately ¹². Additional dietary pattern studies identified breakfast cereals, snacks, baked products, soda, and ultra-processed foods as important contributors to free sugar intake ^{13, 14, 23}. Fruit was consistently identified as the leading source of total sugars across all age groups, reflecting naturally occurring sugars in diet ²⁴.

Clear sociodemographic differences in sugar intake were reported. Children and adolescents consumed higher proportions of energy from free sugars than adults ⁴, while males consumed higher absolute amounts of total and free sugars than females ⁵. Lower parental education was correlated with an increased frequency of daily sugary drink intake in school-aged children ¹⁷. Socioeconomic disparities in free sugar intake were also observed across Canada ²⁷. Therefore, understanding these consumption patterns is essential to formulating effective dietary guidelines and public health strategies to reduce sugar intake among Canadians ^{11, 29}.

Multiple studies assessed sugar intake relative to international recommendations. Mean free sugar intake exceeded the WHO recommendation of less than 10% of total energy intake across most demographic groups ^{4, 28}. More than half of Canadians failed to meet this guideline in national and regional analyses, including French-speaking adults in Québec ^{10, 11}.

Economic and policy-oriented studies demonstrated that excess intake of free sugars and sugar-sweetened beverages contributed to the epidemiological strain of non-communicable conditions and their corresponding financial toll on the medical system in Canada ^{18, 19}. Modelling analyses indicated that non-compliance with dietary recommendations, including overconsumption of free sugars, accounted for a measurable proportion of preventable disease burden ^{7, 18, 19}. Evaluations of food reformulation efforts reported reductions in sugar content in selected food categories over time ^{1, 21}.

Health-focused evidence consistently links sugar intake to dental and metabolic outcomes. Elevated intake of unbound sugars serves as a pronounced driver for both dental caries and type 2 diabetes mellitus, demonstrating a particularly high impact within pediatric and adolescent cohorts ^{2, 6, 22}. Modelling studies suggested that reductions in free sugar content in the food supply could yield population-level

health benefits ^{7, 10}. Finally, several analyses highlighted policy-relevant gaps in Canadian dietary guidance. Recent studies emphasized the relevance of front-of-package

labelling, reformulation strategies, and professional counselling in shaping sugar intake patterns in Canada ^{1, 30}.

Table 2- Summary of Literature Review

Authors	Publication year	Aim and type of study	Main findings and conclusion
Langlois & Garriguet ¹⁶	2011	Analyzed data from the Canadian Community Health Survey to determine sugar intake in Canadians.	Canadians consumed an average of 110 grams of sugars per day, with teenage boys aged 14-18 years being the highest consumers. Nearly half of sugar intake in children and adolescents came from beverages.
Ahmadi et al. ¹⁷	2014	This cross-sectional study, analyzing the relationship between parental education levels and sugary drink consumption among Canadian school-aged children. The study uses survey data to correlate educational attainment with dietary habits.	The study observed dietary patterns among school-aged children in Canada and found that students with parents who had higher education levels (college or university) were less likely to consume sugar-sweetened beverages daily compared to those with less well-educated parents.
Scientific Advisory Committee on Nutrition ²	2015	It includes findings from various cohort studies and randomized controlled trials that investigate the associations between sugar intake, including sugar-sweetened beverages, and health outcomes such as colorectal cancer incidence, type 2 diabetes mellitus, dental caries, and body weight. It highlights the variations in different study designs and the implications for dietary guidelines concerning sugar consumption.	It highlights that higher consumption of sugars and sugar-sweetened beverages is associated with an increased risk of dental caries and type 2 diabetes mellitus, while randomized controlled trials indicate that changes in dietary sugar intake correspondingly affect energy consumption and weight gain, particularly in children and adolescents. Additionally, the World Health Organization recommends reducing free sugars intake to less than 10% of total energy to mitigate health risks associated with high sugar consumption.
Bernstein et al. ¹²	2016	Utilized the Food Label Information Program (FLIP) data to evaluate the prevalence of free sugars in prepackaged foods across Canada, providing insights into sugar content and common sources.	The study found that 63.5% of prepackaged foods in Canada contained free sugar or food sweetening ingredients (FSI), with free sugar accounting for 62% of the total sugar content in these products. Major food categories like desserts, sugars and sweets, and bakery products had the highest proportions of free sugar, indicating that a significant portion of total sugar in these foods comes from added sources rather than naturally occurring sugars.
Lieffers et al. ¹⁸	2018	The study is an economic analysis that estimates the burden of chronic disease in Canada attributable to non-compliance with Canadian food recommendations, focusing on the economic impacts of both underconsumption of protective foods and overconsumption of harmful foods. It utilizes data from the national health survey to calculate population attributable fractions and associated healthcare costs.	The study estimated that not meeting Canadian food recommendations is particularly related to the consumption of harmful foods like sugar-sweetened beverages (SSBs). This highlights the significant impact of unhealthy eating patterns, including SSB consumption, on public health costs, suggesting a need for comprehensive dietary interventions.
Bergeron et al. ¹⁰	2019	Estimated health benefits of a potential reduction in free sugar content in Canadian foods and beverages, highlighting the impact on mortality rates from noncommunicable diseases.	The study revealed that more than half of French-speaking adults in Québec surpass the World Health Organization's guideline of limiting free sugars to less than 10% of daily energy intake, with most of their sugar consumption coming from free sugars. This overconsumption highlights the need for public health interventions aimed at reducing free sugar intake to improve health outcomes in this population.
Jones et al. ¹⁵	2019	Analyzed sugar consumption trends in Canada over a decade, focusing on the contribution of beverages to total sugar intake among children and adults.	Canadians, including children, continued to have high sugar intake, with sugary beverages remaining a significant source of sugar in the diet.
Czoli et al. ²⁰	2019	This study is a longitudinal study that tracks changes in per capita sales of sugary drinks over time, evaluating the impact of policy efforts on consumer purchasing behavior and dietary habits.	Significant decrease in per capita sales volumes of sugary drinks in Canada.

Loewen et al. ¹⁹	2019	The study is an economic analysis estimating the burden of chronic disease in Canada attributable to dietary intake, focusing on compliance with Canadian food recommendations and the associated direct and indirect costs. It utilizes data from the Canadian Community Health Survey to evaluate the economic impact of the underconsumption of protective foods versus the overconsumption of harmful foods.	The study found that poor dietary choices, particularly the underconsumption of protective foods and the overconsumption of harmful foods such as SSBs, contribute significantly to the economic burden of chronic diseases in Canada. Notably, the burden of under consuming healthy foods exceeds that of overconsuming harmful foods like SSBs.
Kirkpatrick et al. ²³	2019	Evaluated dietary patterns in Canada, identifying significant sources of sodium and sugars, emphasizing the contribution of soda to sugar intake.	Bread and flatbread is among top sources of sugars, soda significant sources. Need to address sugar intake from various sources for improved dietary quality of Canadians.
Langlois et al. ²⁴	2019	Investigated age specific sources of sugar consumption and changes in percentage energy from sugars amongst children and adults in Canada.	Fruit was the top source of total sugars for all age groups in the Canadian diet.
Murphy et al. ³¹	2020	This source is a review assessing the nutritional trade-offs involved with fruit juice consumption. It evaluates the balance between nutrient intake and sugar content, possibly using nutrient analysis or dietary assessments.	Fruit juice consumption offers a trade off by providing essential nutrients but also contributing to higher intake of energy and total sugars.
Patenaude et al. ²²	2020	This study is a descriptive study examining the biochemical and physiological impacts of sugar on dental health, specifically focusing on the mechanism of tooth decay.	The study explains how sugar consumption contributes to dental decay, highlighting the role of sugars as a food source for oral bacteria that lead to tooth enamel demineralization and decay initiation.
Liu et al. ¹⁴	2020	Provided average estimates of daily added, free, and total sugar intake in Canada, identifying primary dietary sources.	In 2015, Canadians consumed 57.1 g/day of added sugars, 67.1 g/day of free sugars, and 105.6 g/day of total sugars, with main sources from desserts, breakfast cereals, etc.
Bernstein et al. ²¹	2020	This is an evaluative study regarding the effects of reducing sugar content in processed foods. It may discuss the outcomes of global efforts and interventions aimed at decreasing sugar consumption through reformulation strategies or public health initiatives.	Significant decrease in sugar content in certain food categories in Canada, efforts to reduce sugar intake in the Canadian diet.
Wang et al. ⁵	2020	Analyzed sugar consumption patterns in Canadian adults, detailing differences in total sugar intake related to gender and age and identifying key dietary contributors. Analyzed data from the Canadian Community Health Survey to assess trends in sugar consumption in a decade and model potential impacts of reducing free sugar intake through reformulation.	Men generally consumed more total, free, and added sugars in absolute amounts compared to women, with similar relative average intakes as a percentage of energy intake.
Rana et al. ⁴	2021	Assessed free sugar intake of Canadians relative to WHO recommendations, noting disparities across demographics and the prevalence of exceeding recommended levels. Evaluated free sugar intake across the Canadian population, highlighting disparities in intake by age, gender, and socioeconomic status.	Mean estimated percentage of total energy from free sugars exceeded WHO recommendation across sociodemographic groups.
Mahajan et al. ²⁶	2021	Assessed daily sugar intake by preschool aged children in Guelph and its association with anthropometric measures using food records and statistical models.	Evaluated daily sugar intake in preschool-aged Canadian children and associations with anthropometric measures.
Daley ³⁰	2022	This source is a review, given its focus on the role of dentists in advising behavioral changes relating to dental health and sugar consumption. The narrative seems to be based on practice recommendations rather than original research data.	The article discusses the pivotal role of dentists in providing health behavior change advice, particularly in guiding children on reducing sugar and sugar-sweetened beverage consumption to improve oral health.

Liu et al. ⁸	2022	Investigated how moderate sugar consumption can potentially increase essential nutrient intake from sources such as fruits, milk, and yogurt among adults, with implications for diet quality and health outcomes in Canada.	Association between moderate sugar consumption and increased intake of key nutrients explored.
Warren et al. ²⁷	2022	Investigated geographic disparities in free sugar intake within Canada, also addressing age and socioeconomic differences.	Importance of monitoring intake disparities and implementing interventions for health risks addressed.
Hamel et al. ¹³	2022	This is a cross-sectional analysis focusing on the impact of ultra-processed foods (UPF) on sugar consumption among adolescents. It may involve dietary surveys or data analysis to highlight public health implications.	High consumption of free sugars among Canadians, particularly from ultra-processed food products. Recommendations to reduce ultra processed food consumption for better dietary quality.
Chiavaroli et al. ⁶	2022	Examined the relationship between excessive free sugar consumption and childhood obesity, highlighting the risks for chronic health issues among Canadian youth.	Concerns about sugary beverages and their impact on children's body weight discussed.
Gillespie et al. ³	2023	Discussed the absence of a firm national upper limit for added sugar intake in Canadian guidelines compared to recommendations by the American Heart Association for children.	Recommends limiting added sugars intake, with specific recommendations for children; no specific upper limit established in national guidelines.
Yu et al. ²⁸	2023	Analyzed the contribution of free sugars to total energy intake among Canadian children, identifying snacks and beverages as significant sources.	Free sugars contributed to 10.6% of total energy intake, with snacks and beverages being major sources, impacting children's diets.
Flexner et al. ¹¹	2023	A systematic algorithm was used to differentiate free and naturally occurring sugars, find a high intake of free sugars by Canadians, and identify key dietary sources.	Canadians consume an average of 116.4 g of total sugar daily, with free sugars accounting for 72.5 g. More than half do not meet the WHO recommendation.
Dasgupta et al. ⁹	2023	Analyzed consumption trends, highlighting the decline in traditional sugary drink consumption among Canadians and the rise in novel sugar sweetened beverages like energy and sports drinks, indicating shifts in beverage consumption patterns.	Decline in traditional sugary drinks but rise in novel types like energy drinks noted.
Bernstein et al. ¹	2023	Assessed changes in dietary patterns, showing a reduction in free sugar intake and its impact on overall calorie consumption and potential health outcomes in Canada.	Consideration of product reformulation to lower free sugar content, challenges and implications discussed.
Lee et al. ²⁵	2023	Analyzed Canadian free sugar consumption patterns, revealing high intake levels and the dietary sources contributing most significantly.	Canadian adults derive significant calorie intake from foods needing FOP labels, with fruit juices and drinks as major sources of total and free sugars. Importance of FOP labeling regulations in nutrient intake patterns.
Emmett, P. ²⁹	2023	Discusses research findings on dietary sugar intake patterns of Canadians and highlights their implications for health policy intervention.	Studies on free sugar intake are essential for assessing health implications
Zaltz et al. ⁷	2024	Discussed the common risk factor approach in addressing sugar consumption to mitigate risks for dental problems and chronic diseases, including obesity, diabetes, and cardiovascular conditions in Canada.	The findings indicate that a 20% reduction in free sugars in the Canadian food supply could lead to significant health benefits, emphasizing the necessity for targeted policy actions to lower sugar content in prepackaged foods. The research utilizes a common risk factor approach to demonstrate that addressing sugar consumption can reduce risks for multiple health issues, including dental problems and chronic diseases such as obesity, diabetes, and cardiovascular conditions.

Discussion

This review highlights ongoing public health concerns related to high free sugar intake among the Canadian population. It reveals a consistent pattern; for example,

Canadians, particularly children and adolescents, consume significant amounts of free sugars through ultra-processed foods, sugary drinks, and baked goods. This trend poses a considerable threat to cardiovascular health and other metabolic conditions. Such findings highlight the urgent

need for public health interventions. Despite slight reductions in beverage-related sugar intake, the prevalence of sugary drink consumption signals the necessity for targeted measures, including sugar taxes, improved nutritional labeling, and tighter marketing regulations directed toward children¹⁵. By prioritizing these strategies, alongside educational initiatives to bolster healthier dietary choices, public health stakeholders can endeavor to reduce the rates of excessive sugar consumption in Canada¹.

A critical insight from the reviewed studies is the potential of front-of-pack labeling to influence healthier consumer choices. Such initiatives have yielded positive outcomes globally, offering a valuable strategy to address excessive sugar consumption in Canada²⁵. Notably, while fruit juice does provide essential nutrients, its high sugar content represents a slight health trade-off³¹. By encouraging customers to choose lower-sugar products, implementing clear nutritional labels may help them become more aware of these distinctions and reduce their sugar intake. The decline in per capita sales volumes of sugary drinks from 2004 to 2015 further highlights the importance of robust policy efforts in shaping health-conscious consumption patterns, suggesting ample scope for labeling to become a catalyst for continued change in dietary habits²⁰.

Moreover, the reviewed literature emphasizes the adverse role of ultra-processed foods (UPF) on sugar consumption, particularly among adolescents, pointing out a substantive public health issue¹³. UPFs are key contributors to excessive sugar intake, necessitating dedicated public health campaigns and educational efforts to shift consumption towards whole foods. Studies illustrate that reducing UPF intake could reduce overall sugar consumption, aligning with global efforts demonstrated through reduced sugar content in processed products²¹. Examining successful global initiatives provides valuable insights that can be adapted for effective policies in Canada. These findings illuminate a pressing gap between current sugar intake levels and the WHO's dietary guidelines, underscoring a broader health dilemma about the quality of diets prevalent in Canada and their resultant health impacts. Finally, the linkage between free sugar consumption and dental health signifies an additional area demanding immediate action. Sugars in food and drinks are implicated in enhancing oral bacteria activity, leading to conditions like enamel demineralization and the onset of tooth decay²². To mitigate these problems, the integration of dental health policies with broader nutritional guidelines is critical. By endorsing initiatives such as sugar taxation, enhanced labeling, and marketing restrictions on sugary products for youth, this review stresses the requisite role of strategic policy interventions. Such comprehensive approaches for controlling sugar-related health concerns could effectively mediate the detrimental implications of high sugar consumption, fostering well-rounded health improvements

within the Canadian population. Overall, identifying these pivotal findings and promising strategies calls for sustained research efforts and a multi-faceted approach to ensuring collective advancement in public health and nutritional behaviors across diverse demographics.

Despite providing valuable insights, this review has its limitations. The scope of reviewed studies is generally restricted by their cross-sectional design, which potentially limits causal inferences about the factors influencing sugar consumption. Furthermore, variations in study methodologies, sample populations, and dietary assessment tools could have introduced inconsistencies. Future research should strive for longitudinal designs to better understand causal pathways and trends over time. Comprehensive studies focusing on diverse subpopulations, including varying ethnic backgrounds and geographical settings, are needed to contextualize sugar consumption patterns effectively. Additionally, future investigations should explore the long-term efficacy of implemented public health interventions and policy measures toward curbing sugar overuse and optimizing broader epidemiological trends throughout Canada. Building a robust evidence base will be essential to inform policy amendments and public health strategies that address the slight dynamics of sugar consumption at both individual and population levels.

Conclusion

Canadians' intake of free sugars, particularly from sugary beverages, desserts, and ultra-processed foods, poses an avoidable burden on oral and metabolic health, with socioeconomically disadvantaged children and adolescents disproportionately affected. To reduce free-sugar consumption and associated harms, Canadian policy should prioritize a combination of evidence-based measures: (1) mandatory front-of-pack nutrition labeling that clearly identifies high free-sugar products; (2) targeted fiscal measures (e.g., tiered excise taxes on sugar-sweetened beverages) with revenue ring-fenced for nutrition and oral-health promotion in low-income communities; (3) stronger marketing restrictions limiting promotion of high-sugar products to children; (4) incentives and regulations to support product reformulation to lower free-sugar content; and (5) integration of oral-health messaging into broader nutrition programs (school food standards, community oral-health initiatives). Monitoring and evaluation frameworks must measure impacts by age and socioeconomic subgroup to ensure equitable benefits. Implementing this multi-pronged, equity-focused policy package would most effectively reduce free-sugar exposure and the dual burden of dental caries and chronic disease in Canada.

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