

Taxation and Sugar-Sweetened Beverages

*Position of
Dietitians of Canada*

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ABSTRACT

Dietitians of Canada recommends that an excise tax of at least 10-20% be applied to sugar-sweetened beverages sold in Canada given the negative impact of these products on the health of the population and the viability of taxation as a means to reduce consumption. For the greatest impact, taxation measures should be combined with other policy interventions such as increasing access to healthy foods while decreasing access to unhealthy foods in schools, daycares, and recreation facilities; restrictions on the marketing of foods and beverages to children; and effective, long-term educational initiatives.

This position is based on a comprehensive review of the literature. The Canadian population is experiencing high rates of obesity and excess weight. There is moderate quality evidence linking consumption of sugar-sweetened beverages to excess weight, obesity, and chronic disease onset in children and adults. Taxation of sugar-sweetened beverages holds substantiated potential for decreasing its consumption. Based on economic models and results from recent taxation efforts, an excise tax can lead to a decline in sugar-sweetened beverage purchase and consumption. Taxation of up to 20% can lead to a consumption decrease by approximately 10% in the first year of its implementation, with a postulated 2.6% decrease in weight per person on average. Revenue generated from taxation can be used to fund other obesity reduction initiatives. A number of influential national organizations support a tax on sugar-sweetened beverages.

Taxation des boissons avec sucre ajouté

Prise de position des Diététistes du Canada

RÉSUMÉ

Les diététistes du Canada recommandent qu'une taxe d'accise d'au moins 10 à 20 % soit appliquée sur les boissons avec sucre ajouté vendues au Canada en raison de l'impact négatif qu'ont ces produits sur la santé de la population et de la praticabilité de la taxation comme moyen de réduire la consommation. Pour obtenir un impact maximal, les mesures de taxation devraient être combinées à d'autres politiques, par exemple une augmentation de l'accès aux aliments sains et une diminution de l'accès aux aliments malsains dans les écoles, les services de garde et les installations de loisirs; des restrictions sur le marketing d'aliments et de boissons auprès des enfants; et des initiatives éducatives efficaces visant le long terme.

Cette prise de position se fonde sur une revue exhaustive de la littérature. La population canadienne présente des taux élevés d'obésité et de surpoids. Il existe des données probantes de qualité modérée associant la consommation de boissons avec sucre ajouté à l'apparition du surplus de poids, de l'obésité et de maladies chroniques chez les enfants et les adultes. Par ailleurs, une taxe sur les boissons sucrées a un impact sur la consommation. Selon certains modèles économiques et les résultats issus de récents efforts de taxation, une taxe d'accise peut mener à une diminution de l'achat et de la consommation de boissons avec sucre ajouté. En effet, une taxation allant jusqu'à 20 % peut entraîner une réduction de la consommation d'environ 10 % au cours de l'année suivant la mise en oeuvre, ainsi qu'une diminution du poids de 2,6 % par personne, en moyenne. De plus, les recettes générées par la taxation peuvent être employées pour financer d'autres initiatives de réduction de l'obésité. D'autres organismes nationaux d'influence soutiennent également la taxation des boissons avec sucre ajouté.

POSITION STATEMENT

Dietitians of Canada recommends that an excise tax of at least 10-20% be applied to sugar-sweetened beverages sold in Canada given the negative impact of these products on the health of the population and the viability of taxation as a means to reduce consumption. For the greatest impact, taxation measures should be combined with other policy interventions such as increasing access to healthy foods while decreasing access to unhealthy foods in schools, daycares, and recreation facilities; restrictions on the marketing of foods and beverages to children; and effective, long-term educational initiatives.

INTRODUCTION

Obesity and excess weight in all age groups continue to be at high levels in Canada with 62% of Canadian adults and 32% of children and youth (6-17 years) having excess weight or obesity (1,2). In 2004, Canada endorsed the World Health Organization (WHO) *Global Strategy on Diet, Physical Activity and Health* and in 2010, the Public Health Agency of Canada released *Curbing Childhood Obesity* (3,4) calling for government leadership and joint and complementary actions by other sectors of society. Recommended measures included coordinating efforts to provide supportive environments for healthy eating, increasing access and availability of healthy foods, and decreasing access, availability, and advertising of foods high in fat, sugar, and sodium.

Definitions of sugar-sweetened beverages (SSBs) vary. For the purposes of this position paper, the definition of the Centre for Disease Control and Prevention is applied which is, SSBs include “soft drinks (soda or pop), fruit drinks, sports drinks, tea and coffee drinks, energy drinks, sweetened milks or milk alternatives, and any other beverages to which sugar ... has been added” (5). It is recognized that sweetened milks and milk alternatives contain important nutrients and are nutritionally superior to soft drinks yet adding sugar to milk and milk alternatives adds calories

without improving the nutritional quality of the beverage (5). Intake of SSBs is one of the dietary factors leading to the increase in obesity and overweight rates (6,7). As jurisdictions around the world implement taxes on sugar-sweetened beverages, evidence is accumulating to support taxation as a promising measure for decreasing their consumption and potential impact on the health of the population (8).

In 2010, DC released a position paper calling for restrictions on the advertising of unhealthy foods and beverages to children (9) and now DC is working with other Canadian organizations concerned about marketing to children (10). Dietitians of Canada has also called for and supported school nutrition and daycare policies and programs that increase access to healthier foods and decrease access to foods high in fat, sugar, and sodium such as SSBs. This position paper focuses on taxation as a policy instrument to limit consumption of SSBs.

HOW MUCH SUGAR IS CONSUMED BY CANADIAN ADULTS AND CHILDREN AND WHAT IS IDEAL?

In Canada, approximately 13% of the total daily calorie intake comes from added sugars (11,12). Add to this the consumption of foods high in free sugars (e.g., fruit juice, honey, syrups etc.), and the intake of sugars increases to 15% of total daily caloric intake of Canadians (11,12). This level of consumption exceeds the 2015 WHO recommendation to limit free sugar¹ consumption to 10% of total energy intake to reduce the risk of overweight, obesity, and tooth decay (13). Based on the average dietary needs of 2000 calories for an adult, 10% of total energy intake equates to approximately 50 grams of free sugar or 12-13 teaspoons of sugar a day, including sugar from fruit

¹ Free sugar is defined by the World Health Organization and the US Food and Agriculture Organization in multiple reports as “all monosaccharides and disaccharides added to foods by the manufacturer, cook, or consumer, plus sugars naturally present in honey, syrups, and fruit juices”.

juice, honey, and syrups (14,15). A single can of sugar-sweetened soda can contain up to 40 grams or 10 teaspoons of sugar. Consumption of SSBs has a large impact on the total sugar consumption of Canadians, specifically adolescents as 7-8% of their daily energy intake is from SSBs (16) and one in three report daily consumption of sugary drinks (11). Although intakes and sales of carbonated SSBs have been stabilizing or modestly declining over the past three decades, sales of other sugary drinks (energy drinks, sports drinks, sugar-sweetened waters) have increased significantly around the world (16). In Canada, intake of these other sugary drinks has increased, specifically among adolescents (16).

WHY LIMIT CONSUMPTION OF SUGAR-SWEETENED BEVERAGES?

There is moderate quality evidence supporting the relationship between body weight and intake of SSBs in both children and adults (17–21). Children with high intakes² of SSBs are 55% more likely to have obesity or excess weight in comparison to those with low intakes² (13). Children who consume SSBs during infancy are more likely to have obesity within six years (22). Having obesity or excess weight increases one's risk for several chronic and/or serious diseases including hypertension, coronary heart disease, insulin resistance, type 2 diabetes, joint problems and esophageal, pancreatic, colorectal, breast, endometrial, prostate and kidney cancers (4,23,24). There may also be a direct link (independent of body weight) between the consumption of SSBs and several chronic diseases including type 2 diabetes, cardiovascular disease, dyslipidemia, and metabolic syndrome (25–30). An increased incidence of dental caries, specifically in adolescents, is also associated with high intakes of free sugars (12,13).

The consumption of SSBs has been shown to displace other nutritionally superior beverages such as milk (31). Canadian food intake data indicates that as

sweetened beverage (soft drinks and fruit drinks) consumption increases, there is an associated decrease in plain milk consumption (32). Diets high in sugar are lower in some micronutrients and may lead to nutritional inadequacy (33). Nutrient intake is displaced with each 5% increment of added sugars over the 10% recommendation (34). Finally, there is evidence that individuals do not compensate for calories consumed in liquid form by consuming fewer calories from solid food. This lack of compensation applies to calories consumed from SSBs and it may be one of the mechanisms linking SSBs consumption to weight gain (35–37).

TAXATION OF SUGAR SWEETENED BEVERAGES – A VIABLE POLICY OPTION

Evidence of moderate quality from recent systematic reviews demonstrates that taxation on SSBs can lead to modest decreases in consumption and improvements in body mass index, specifically in high-income countries (38–40). Although, taxes can be applied at different points in the food production, distribution, and retail continuum, numerous reviews and many public health experts have suggested the implementation of an excise tax on SSBs (8,41). An excise tax, unlike a sales tax paid by the consumer at the point of purchase, is levied before the point of purchase. Higher shelf-prices are more of a deterrent for purchase, than sales taxes added at the cash register (42). A recent review and micro-simulation model by The Childhood Obesity Intervention Cost-Effectiveness Study's (CHOICES) research team reported that of all the commonly proposed approaches and policies, the implementation of an excise tax on SSBs was one of three cost-effective interventions

²Intakes classified as servings of SSBs: One serving of SSBs was equivalent to 240 mL and contained 26g of sucrose, equaling ~5% of total daily energy intake for adults. Daily serving of SSBs at >1 or 2 were classified as **high intakes**. None or 'very low' consumption of SSBs per day was classified as **low intake**.

that would result in substantial prevention of childhood obesity (43). Taxation was on par with policies for elimination of tax deduction for advertising of nutritionally poor foods to children and the creation of nutrition standards for foods and beverages sold in schools (43). Such a policy could also save more in health care costs over the next decade (2015-2025) than it would cost to implement, and could generate substantial revenue to fund other obesity prevention interventions (43,44). According to Canadian research, a tax of 5 cents/100mL is capable of generating up to \$1.8 billion per annum (45). When the idea of targeting this revenue to health-related activities and support of various obesity reduction programs is presented as an option, the general public appears to be more willing to support taxation measures (46). According to a 2011 poll, 40% of Canadians strongly support a tax on sugary drinks if the proceeds are used to fund the fight against obesity (47).

A number of influential Canadian national organizations support a tax on SSBs or sugary drinks including the Childhood Obesity Foundation (48), Heart and Stroke Foundation of Canada (14), Chronic Disease Prevention Alliance of Canada (49), and the Canadian Diabetes Association (50) and in the United States, the American Public Health Association (51) and Oral Health America (52). Public Health England has suggested that a tax of 10 – 20% would have a significant impact on the purchase and consumption patterns of SSBs and other high-sugar products and ultimately population health (53).

Price is one of the major factors that influences food choices (54). Consumption patterns are modulated by price elasticity of demand, a measure of the quantity of responsiveness in demand with a change in price (55,56). The demand for SSBs is elastic (57). High product elasticity, such as that of SSBs, makes substitutions to similar products less likely and allows for price changes to create greater and easier transitions in purchase and consumption patterns (57,58). Economic models have suggested

that a 10% tax would reduce consumption by 8 to 13% (59) and that the greater the increase in the price of SSBs, the greater the decrease in their consumption (46). A study done in Norway found that those who consume the largest quantities of SSBs are most sensitive to price and that an increase of 11% in the cost of SSBs would reduce consumption in the lowest consuming group by 7% and in the highest consuming group by 17%. This effect would be magnified with larger tax increases (60). For instance, in a report for the USDA (61), modeling was used to determine the effect of a 20% increase in the cost of SSBs. The results suggested that consumers would adjust their choices to alternatives such as water, juice, coffee/tea, milk and/or diet drinks. A 20% price increase on SSBs may equate to an average 2.6% weight decrease during the first year of implementation of the tax (56). This would occur due to a theorized 8 – 10% reduction in consumption based on the estimates of price elasticity of demand (55,56). Although these caloric changes are small, there is a benefit to changing consumption patterns in light of evidence that SSBs intake is correlated to chronic disease risk, irrespective of caloric intake or body weight.

Several countries and regions such as France, Hungary, Mexico, and Berkeley (California) have implemented a tax on SSBs or foods high in sugar, however evaluation data is only available on the policies implemented in Mexico and Berkeley (11,42,54,62). A 10% excise tax on SSBs (non-dairy and non-alcoholic beverages) has been implemented in Mexico where caloric soda is currently one of the top beverage choices (63). Results from an observational study on the Mexico experience demonstrated a 6-12% decline in purchases in 2014, when compared to pre-tax trends (64). These results were observed across socioeconomic groups and occurred in conjunction with an increase in water consumption (64). A 17% reduction in purchase of SSBs, was observed in the lowest socioeconomic groups (64). The City of Berkeley levied a tax of one cent (\$0.01)

per fluid ounce on SSBs (65). Post-tax data showed significant pass-through rates (extent of tax passed through to consumers via higher retail prices) of the excise tax and increased retail prices, marking an important step towards reducing SSBs consumption (42).

CRITICISMS OF USING TAXATION AS A POLICY TOOL?

The most common objections to taxation of SSBs are that it will be (a) regressive, (b) intrusive, (c) ineffective, and (d) detrimental to jobs and the economy.

a. The most prevalent criticism is that it is a regressive tax – that is, it has a disproportionate effect on people at the lowest income levels (66). Despite the theorization of the regressive burden of such a tax, data from studies conducted around the world show inconsistencies. Some show that taxation of SSBs may be equally effective for all socioeconomic groups, others show that tax burden on low-income groups will likely be small, and one reports it to be progressive, thereby imposing a greater burden on those in the higher socioeconomic strata (67,68). Conversely, if the tax is indeed regressive, it is important to note that lower income families are also more price-sensitive in comparison to higher income families. Hence, there is a greater chance for this population to decrease consumption of SSBs (67,69). Currently, SSBs are considerably cheaper than healthier beverages. For example, although prices vary across the country, the average price of a one-litre container of milk in Canada in 2015 was \$2.47 compared to \$1.94 for a two-litre bottle of cola beverage (70). Increasing the price of SSBs through taxation would lessen the relative price difference between the two products, which might make healthier beverages more desirable. A recent review reported that an increase in the price of SSBs would lead to an increase in the consumption of substitutes such as fruit juice and milk and a decrease in consumption of complements such as diet-

drinks (46). Although the consumption of these alternative beverages may not lead to a substantial effect on decreasing caloric intake (71), they are of greater nutritional value which contributes to satiety, and some (i.e., dairy products) are associated with better weight status (46,72). Overall, since many SSBs offer little or no nutritional benefits and are linked to obesity, overweight, and numerous chronic diseases, there would be a benefit for the population as a whole to reduce the intake of these beverages.

- b. Another criticism offered is that governments and policy makers have no business interfering in food choices of the population (66). This assumes that government policies do not already affect food choices – which is untrue. Governments set policies and enact regulations that affect all facets of the food supply system. There are sound political and economic arguments that support government intervention when external costs to third parties are high (73,74). This is the case in countries such as Canada and the United Kingdom where health care is publicly funded. As well, recent surveys have shown that the public is willing to pay increased taxes if generated funds are used for the creation of programs that minimize childhood obesity (57). Research on message framing studies shows that policies need to be continually reinforced in order to generate awareness, news coverage, and discussion, which may eventually lead to increased support of the cause (75). Support of SSBs taxation is bound to increase with clear identification of potential health benefits (76).
- c. Others have argued that taxation is not a viable solution given obesity is the result of multiple factors (75,76). As recommended by the WHO and others, this points to the importance of taking a comprehensive and integrated approach to address obesity, with the inclusion of education and policy initiatives (13,77,78). Long-term educational interventions in schools, workplaces, retail stores, and via media communications show promise in encouraging the population to make healthier beverage choices but education alone is not sufficient

(53). Obesity prevention warrants broader and multifaceted actions from all relevant commercial and noncommercial sectors to replace the 'obesogenic' food environments with a healthy one (79,80).

- d. A common concern of the food and beverage industry is that taxation will have a negative economic impact led by the loss of profits and jobs (76). These arguments may be overstated because they do not account for (i) the increased or substituted consumption of non-SSB products usually produced by the same companies, (ii) the effects of consumer reallocation to non-beverage goods and services, and (iii) the economic activity generated by higher tax revenue (81). Based on a comprehensive economic model that takes into account the full economic impact of taxation, taxation on SSBs (20% increase) has the potential to create a slight increase or a zero net change in employment (81).

CONCLUSIONS

There is moderate quality evidence linking the consumption of SSBs to having excess weight, obesity, and chronic diseases in children and adults. Approximately 15% of Canadians' total daily caloric intake comes from free sugars. The World Health Organization recommends a limit of 10% of energy intake from free sugars. Sugar-sweetened beverages make a substantial contribution to the total sugar intake of Canadians, especially for adolescents, with 7-8% of their total energy intake being from SSBs.

There is moderate quality evidence that taxation of SSBs is an effective measure in improving dietary behaviours of populations. Economic models and results of taxation of SSBs in Mexico indicate that an excise tax of 10-20% leads to a decline in purchases. Although some argue against taxation as a viable policy measure, many Canadians support taxation especially if the revenue is used to fund public health programs.

Taxation of SSBs in conjunction with other policy efforts, including restrictions on the marketing of foods and beverages to children, limiting access in schools, daycares, and recreation facilities, and effective long-term educational initiatives will have more impact than any one effort on its own. Taxation of SSBs is one step, of the many required, to address the obesity epidemic.

KEY MESSAGES

- There is moderate quality evidence linking the consumption of sugar-sweetened beverages to having excess weight, obesity, and chronic diseases.
- Sugar-sweetened beverages include sweetened carbonated and non-carbonated beverages such as sodas, fruit drinks, energy drinks, sports drinks, and any other beverages to which sugar has been added.
- It would be prudent to follow the World Health Organization recommendations, and limit intake of free sugars to less than 10% of total daily calorie (energy) intake. This is approximately 50 g (12-13 teaspoons) of free sugars consumption per day based on a 2000-calorie diet. Current intakes are at about 15% of total energy intake.
- Canadian children and adults should limit their intake of sugar-sweetened beverages. To quench thirst, consume water instead.
- Sweetened milks and milk alternatives contain added sugar but also contain important nutrients and are nutritionally superior to soft drinks. The primary concern is the volume of soft drinks, fruit drinks, energy drinks, sports drinks and sugar-sweetened waters consumed by children, teens and adults.
- Based on available evidence, policy efforts that decrease the consumption of sugar-sweetened beverages have the potential to positively impact the health of Canadians.
- Taxation has emerged as one viable policy option to reduce the consumption of sugar-sweetened beverages. An excise tax of at least 10-20% is expected to have a considerable impact on the consumption of sugar-sweetened beverages.

- The impact of taxation on sugar-sweetened beverages should be monitored and evaluated to determine the impact on consumption patterns, dietary behaviours, and health outcomes.
- Taxation of sugar-sweetened beverages in conjunction with other policy efforts, including restrictions on the marketing of foods and beverages to children, limiting access in schools, daycares, and recreation facilities, and effective long-term educational initiatives will have more impact than any one effort on its own.

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