

HEALTH AND ECONOMIC IMPACTS OF SUGARY DRINKS IN CANADA

Research summary

ABOUT THE RESEARCH

Canadian Cancer Society, Canadian Diabetes Association, Childhood Obesity Foundation, Chronic Disease Prevention Alliance of Canada, and Heart & Stroke commissioned researchers at the University of Waterloo (Amanda C Jones, Dr J Lennert Veerman and Dr David Hammond) to examine current and projected levels of sugary drink consumption and the projected impacts on Canadians' health, and costs to the health care system.

The study includes an analysis of national data on sugary drink sales and consumption in Canada, and projects the health and economic impact of sugary drinks in Canada.

Background

Sugary drinks represent an important source of sugar consumption among Canadians. Excess consumption of sugary drinks is associated with an increased risk of type 2 diabetes, metabolic syndrome, cardiovascular disease, cancer, and dental caries, primarily, but not exclusively, through its association with weight gain and obesity.

Definitions

Free sugars are monosaccharides and disaccharides added to foods and beverages, plus sugars naturally present in honey, syrups, fruit juices, and fruit juice concentrate.

Sugary drinks (drinks with free sugars) include non diet soft drinks, ready to drink sweetened coffees and teas, energy drinks, sports drinks, flavoured waters, flavoured milk and drinkable yogurts, fruit drinks and 100% juice.

Methodology

Sales data were purchased from Euromonitor International for the years 2001 to 2015 for the following beverage categories: non-diet cola and non-cola carbonated soft drinks, ready-to-drink teas and coffees, energy drinks, sports drinks, flavoured bottled water, flavoured milk, drinkable yogurt, concentrates (defined as fruit drinks), juice drinks (up to 24% juice), nectars (24-99% juice), and 100% juice.

Canadian Community Health Survey (CCHS) data from 2004 was used to look across age categories at the volume and energy (calories) due to sugary drink consumption among Canadians. To provide an estimate of more recent sugary drink consumption, the historic patterns observed in the Euromonitor sales data were applied to the CCHS diet survey data. CCHS uses a rigorous dietary recall method; however, studies show that individuals typically underreport the quantity of food and beverages that they consume. As a result, these estimates can be considered lower than Canadians' actual sugary drink consumption.



Health and economic costs model

A simulation model was used to estimate the health and economic impact of Canadians' sugary drink consumption. In the model, the health effects of sugary drinks are mediated primarily through increased body mass index (BMI). Estimates of the relative risks of disease due to high BMI were drawn from the *Global Burden of Disease Study (GBD) 2015* for the 19 diseases included in the model. The impact of sugary drink consumption on type 2 diabetes not mediated through BMI was included. However, other non-BMI mediated risks from sugary drinks were not included in the model. Accordingly, the model outputs may be considered conservative estimates of the health burden associated with sugary drinks.

Epidemiology and cost data on diseases of interest were selected based on disease definitions specified by the Global Burden of Disease (GBD) 2015 Study using International Classification of Diseases (ICD) codes. Direct health care costs for each disease were calculated from Canada's most recent national disease-specific costs study, the *Economic Burden of Illness in Canada (EBIC) 2005-2008*, and the Canadian Institute for Health Information's (CIHI) *National Health Expenditure Database (NHEx)*.

Direct health costs consisted of hospital care, physician care, drugs, other professionals, public health and other health spending. Indirect costs, such as the value of lost production due to one's illness, injury or premature death, were not included. Costs were estimated in 2015 dollars, and the health and economic impacts were modelled over a 25-year period, from 2016-2041.

Overall, the model provides projections of disease morbidity, disability-adjusted life years (DALYs – the number of years of healthy life lost due to ill health, disability or early death), mortality and health care costs associated with Canadians' consumption of sugary drinks.

SUMMARY OF FINDINGS

Sugary drink sales

In 2015, Canadians purchased an average of 444ml of sugary drinks per day (including 100% juice). The total volume of sugary drinks sold in Canada has remained steady between 2004 and 2015 however, the per capita sales of sugary drinks have decreased due to increasing population size.

While non-diet soft drink sales have decreased over the past 12 years the decrease has largely been offset by the emergence and increased consumption of newer beverage categories including energy drinks, flavoured waters, sweetened coffees, and flavoured dairy products. Sugary drink sales remain near historic highs.

Decreased sales

- Soft drinks -27%
- Fruit drinks -22%



- 100% fruit juice -10%

Increased sales

- Energy drinks +638%
- Sweetened coffees +579%
- Flavoured water +527%
- Drinkable yogurt +283%
- Sweetened teas +36%
- Flavoured milk +21%
- Sports drinks +4%

Between 2004 and 2015, the per capita sales volume of three types of sugary drinks has decreased: regular soft drinks, fruit drinks, and 100% fruit juice. In contrast, the per capita sales volume of energy drinks, sweetened coffee, flavoured water, drinkable yoghurt, sweetened teas, flavoured milk, and sports drinks have increased.

Sugary drink intake

Based on projections from CCHS 2004 dietary intake and Euromonitor sales estimates, in 2015 Canadians consumed an average of 334 ml of sugary drinks each day [NOTE: consumption data are self-reported numbers, which are typically underestimated.] Consumption of sugary drinks was highest among young Canadians.

Sugary drink consumption per day by age:

- Children 0 – 8 years consumed 326ml
- Youth 9 – 18 years consumed 578ml
- Young adults 19 – 30 years consumed 504 ml
- Adults 31+ years consumed 259ml

For many Canadians, the caloric intake from these sugary drinks alone exceeds dietary recommendations to limit free-sugar intake to less than 10% of total energy intake.

Health Care burden and economic costs of sugary drinks in Canada

Over the next 25 years, sugary drink consumption will be responsible for:

- More than 1 million Canadians being overweight and more than 3 million becoming obese
- Almost 1 million cases of type 2 diabetes
- 300,000 Canadians with ischemic heart disease
- 100,000 cases of cancer
- Almost 40,000 strokes.



Sugary drinks will account for an additional 63,321 deaths and 2,185,549 DALYs (the number of healthy life years lost due to ill health, disability or early death) in Canada, and an estimated \$50,657,213,642 in direct health care costs (hospital care, physician care, drugs, other professionals, public health and other health spending) over the following 25 years.





Canadian Cancer Society
Société canadienne du cancer



Canadian Diabetes Association
Association Canadienne du Diabète

