

Discrepancies between health professionals' understanding and the evidence for sugars-related nutrition issues in Canada

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Canadian Sugar Institute Nutrition Information Service

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Estimated Intakes of Added Sugars in Canada and Relationship to Trends in Body Weight

Consumption of added sugars in Canada is often reported to be higher than data suggest. Both popular and scientific articles often incorrectly report unadjusted national food supply (availability) data as actual consumption data. Additionally, when describing Canadian eating habits, US data is often cited. This does not provide an accurate reflection of Canadian consumption patterns, as Canadian intakes of many foods and beverages containing added sugars are substantially below US levels (1).

Misinformation about added sugars consumption may be linked to complications associated with their estimation. Such difficulties include estimating waste adjustment factors to determine apparent consumption from food availability data; missing availability data for some sources of added sugars (notably corn sweeteners); and the lack of a comprehensive database of added sugars content in foods.

In this article, the available literature and various reports are used to provide the best estimates of added sugars consumption in Canada. Estimates of added sugars intake from both Statistics Canada availability data and Canadian Community Health Survey (CCHS) nutrition survey data are explored in detail. Trends in added sugars consumption and body weight are also reviewed.

Estimated added sugars consumption in Canada is:

- 10 - 13% of total energy
- Approximately 61 - 63 g/day
- Stable or modestly declining as a % of total energy
- Substantially below US consumption levels

clips on sugars

FOR UP-TO-DATE INFORMATION ON SUGARS IN HEALTHY EATING

Facts on Sugars

Sugar has been in the human diet for centuries but recently there has been considerable media attention focused on sugars, particularly in relation to weight and overall health. Often, this information is not supported by scientific fact and some messages are misleading and incomplete. It can therefore be challenging to separate fact from fiction. This resource will help to provide:

- A better understanding of how sugars are broken down and utilized in the body
- A comparison between naturally occurring and added sugars
- The functions sugar plays in foods
- A better understanding of total sugars content on the Nutrition Facts table.

What are sugars?

The simplest types of sugars include fructose, glucose and galactose¹. When one glucose and one fructose are joined together they become sucrose (table sugar) and when one glucose

What is the difference between naturally occurring and added sugars?

"Sugar" is pure sucrose, a natural product of photosynthesis and occurs in almost all fruits and vegetables along with other sugars like fructose and glucose. The table sugar we purchase from grocery stores is obtained from sugar cane or sugar beet. It is often thought that there is a difference between naturally occurring sugar and sugar added to foods however, once absorbed, the body uses sugar (sucrose) from sugar cane and sugar beets in the same way it uses sugar (sucrose) from

Background: Media Perception

- Media articles often report that added sugars consumption is increasing and contributing to rising obesity rates and other chronic diseases.



As Canadians we are eating too much 'added sugar.' Sugar gives us energy but not much else. Consuming too much sugar puts us at risk for [heart disease](#), [stroke](#), [obesity](#), [diabetes](#), high blood [cholesterol](#), [cancer](#) and of course [cavities](#).



Diabetes, mood swings and spare tires: The bittersweet truth about sugar

Tax 'toxic' sugar, doctors urge

Age restriction for sugary drinks proposed

CBC News Posted: Feb 1, 2012 4:10 PM ET | Last Updated: Feb 2, 2012 5:16 PM ET



P. Diddy wet the bed as a child, says sugar to blame

Sugar makes you fat - and it may be killing you

HAMILTON SPECTATOR

THE CANADIAN PRESS

Eating Sugar Causes Massive Health Problems, Says WHO

MACLEAN'S **Death by sugar**

How the sweet killer is fuelling the biggest health crisis of our time

THE GLOBE AND MAIL

Excess sugar can triple risk of dying of heart disease: report

Background: Research Reality

- Meta-analyses however demonstrate sugars are no more likely to contribute to weight gain than other energy sources when compared isocalorically.

Dietary sugars and body weight: systematic review and meta-analyses of randomised controlled trials and cohort studies

BMJ 2013 ; 346 doi: <http://dx.doi.org/10.1136/bmj.e7492> (Published 15 January 2013)
Cite this as: *BMJ* 2013;346:e7492

Conclusions Among free living people involving ad libitum diets, intake of free sugars or sugar sweetened beverages is a determinant of body weight. The change in body fatness that occurs with modifying intakes seems to be mediated via changes in energy intakes, since isoenergetic exchange of sugars with other carbohydrates was not associated with weight change.

European Journal of Clinical Nutrition (2014) **68**, 416–423; doi:10.1038/ejcn.2014.8; published online 26 February 2014

Effect of fructose on markers of non-alcoholic fatty liver disease (NAFLD): a systematic review and meta-analysis of controlled feeding trials

Conclusions: Isocaloric exchange of fructose for other carbohydrates does not induce NAFLD changes in healthy participants. Fructose providing excess energy at extreme doses, however, does raise IHCL and ALT, an effect that may be more attributable to excess energy than fructose. Larger, longer and higher-quality trials of the effect of fructose on histopathological NAFLD changes are required.

Worldwide trends in dietary sugars intake

Anna Wittekind^{a1} and Janette Walton^{a2 c1}

subpopulations. In conclusion, the findings from the present review suggest that, in the main, dietary sugars intake are decreasing or stable. A consistent approach to estimation of dietary sugars intake from national nutrition surveys is required if more valid estimates of changes in dietary sugars intakes are required in the future.

Effect of Fructose on Body Weight in Controlled Feeding Trials: A Systematic Review and Meta-analysis

John L. Sievenpiper, MD, PhD; Russell J. de Souza, ScD, RD; Arash Mirrahimi, HBSc; Matthew E. Yu, HBSc; Amanda J. Carleton, MSc; Joseph Beyene, PhD; Laura Chiavaroli, MSc; Marco Di Buono, PhD; Alexandra L. Jenkins, PhD, RD; Lawrence A. Leiter, MD; Thomas M.S. Wolever, MD, PhD; Cyril W.C. Kendall, PhD; and David J.A. Jenkins, MD, PhD, DSc

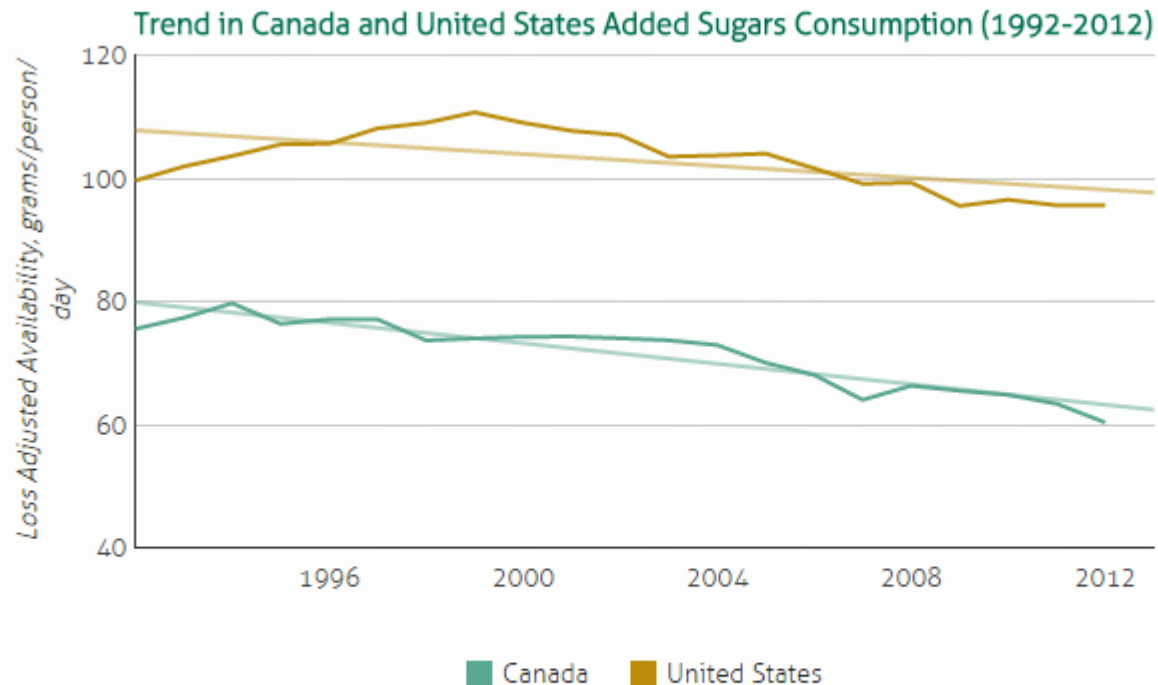
Conclusion: Fructose does not seem to cause weight gain when it is substituted for other carbohydrates in diets providing similar calories. Free fructose at high doses that provided excess calories modestly increased body weight, an effect that may be due to the extra calories rather than the fructose.

Fructose vs. glucose and metabolism: do the metabolic differences matter?

[Sievenpiper JL](#)¹, [de Souza RJ](#), [Cozma AI](#), [Chiavaroli L](#), [Ha V](#), [Mirrahimi A](#).

Background: Sugars Consumption

- Consumption of added sugars in Canada has been declining and is estimated to be approximately 11% of total daily caloric intake.



Data source: Canada: Statistics Canada, CANSIM. Adjusted for waste using updated USDA Loss-Adjusted Food Availability. United States: USDA, Caloric sweeteners: Per capita availability adjusted for loss.

Objectives

The objective of this study was to assess:

- Health professionals' perceptions regarding Canadian added sugars consumption patterns; and
- Their degree of agreement towards certain statements on sugars and health.



Methods

- Voluntary questionnaires completed by health professionals at the Dietitians of Canada and Canadian Diabetes Association National Conferences in 2014
- A total of **335** respondents; primarily dietitians
- Questionnaires included five questions on topics pertaining to dietary sources of sugars, basic sugar metabolism in humans, and the association between sugar consumption and health

Microsoft Office Excel 2007 was used to conduct data analysis.



Results: Demographics

Respondent demographics

Dietitians of Canada National Conference (n=139)

- Clinical 43%
- Industry 11%
- Public health 8%
- Community 5%
- Dietetic student 14%

Canadian Diabetes Association Professional Meeting (n=196)

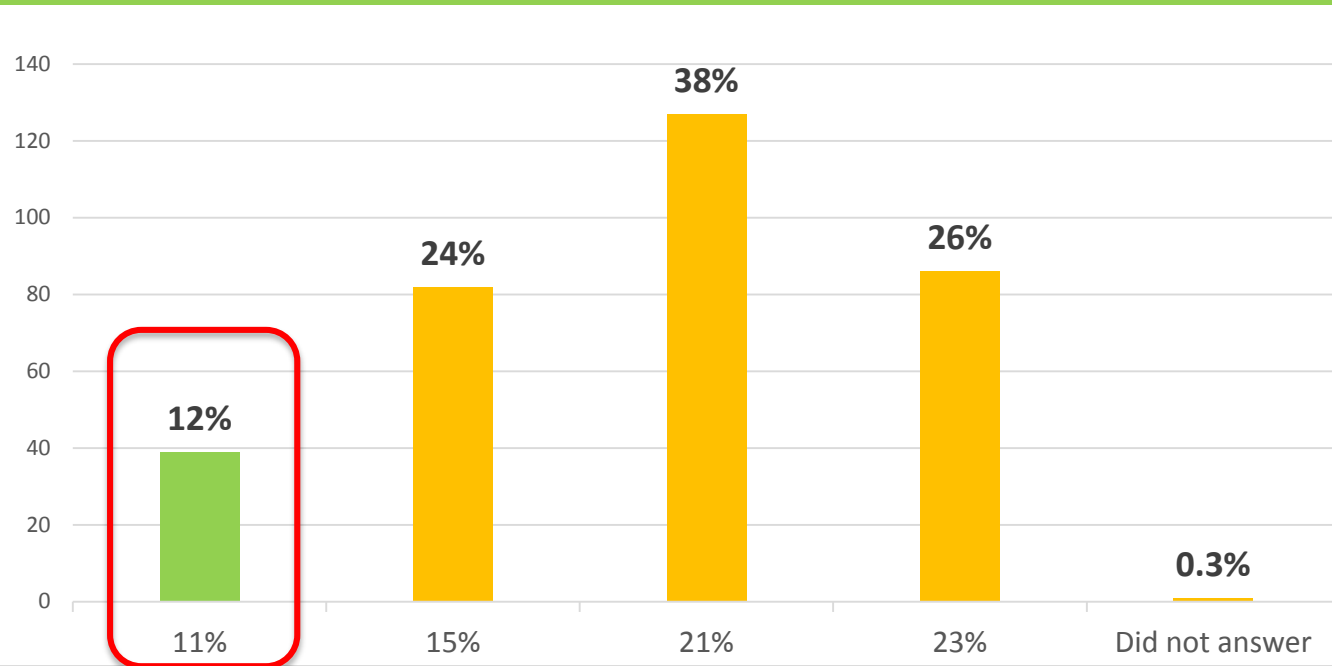
- Dietitians 29%
- Nurses 34%

Results: Sugars Consumption in Canada

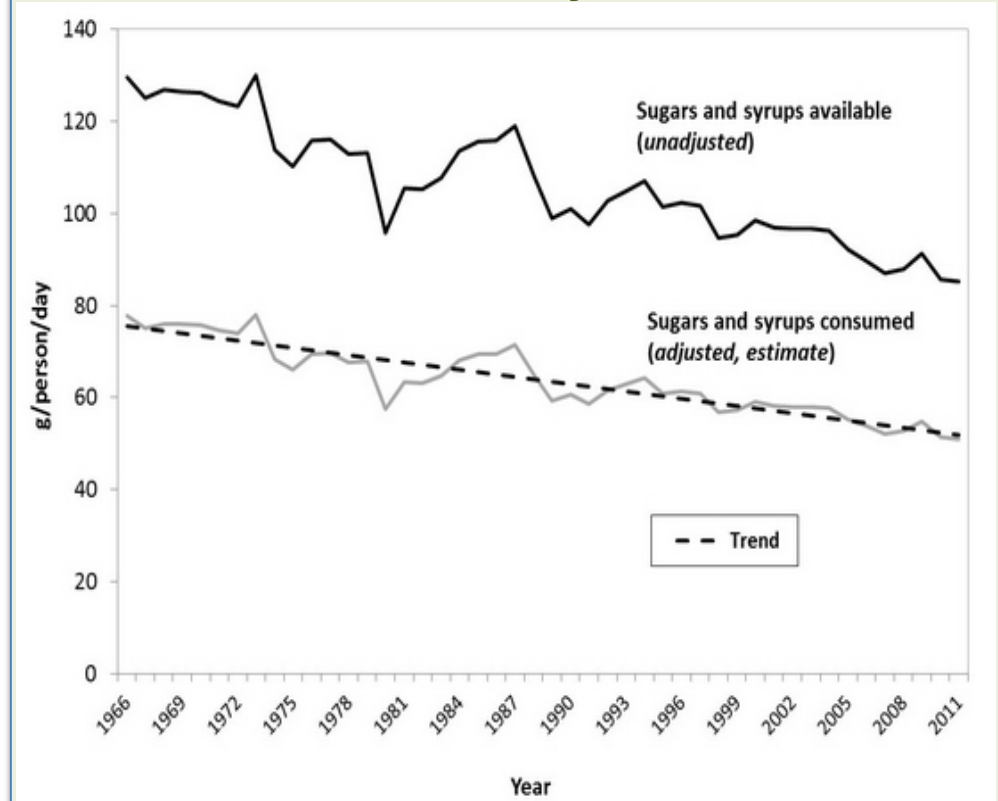
Question 1: The average consumption of added sugars (i.e. sugars added to foods and beverages; does not include naturally occurring sugars such as in fruits and milk) in Canada is estimated to be approximately _____ of total daily caloric intake.

Perception

Only 12% of respondents correctly identified the current estimate of added sugars consumption in Canada



Reality

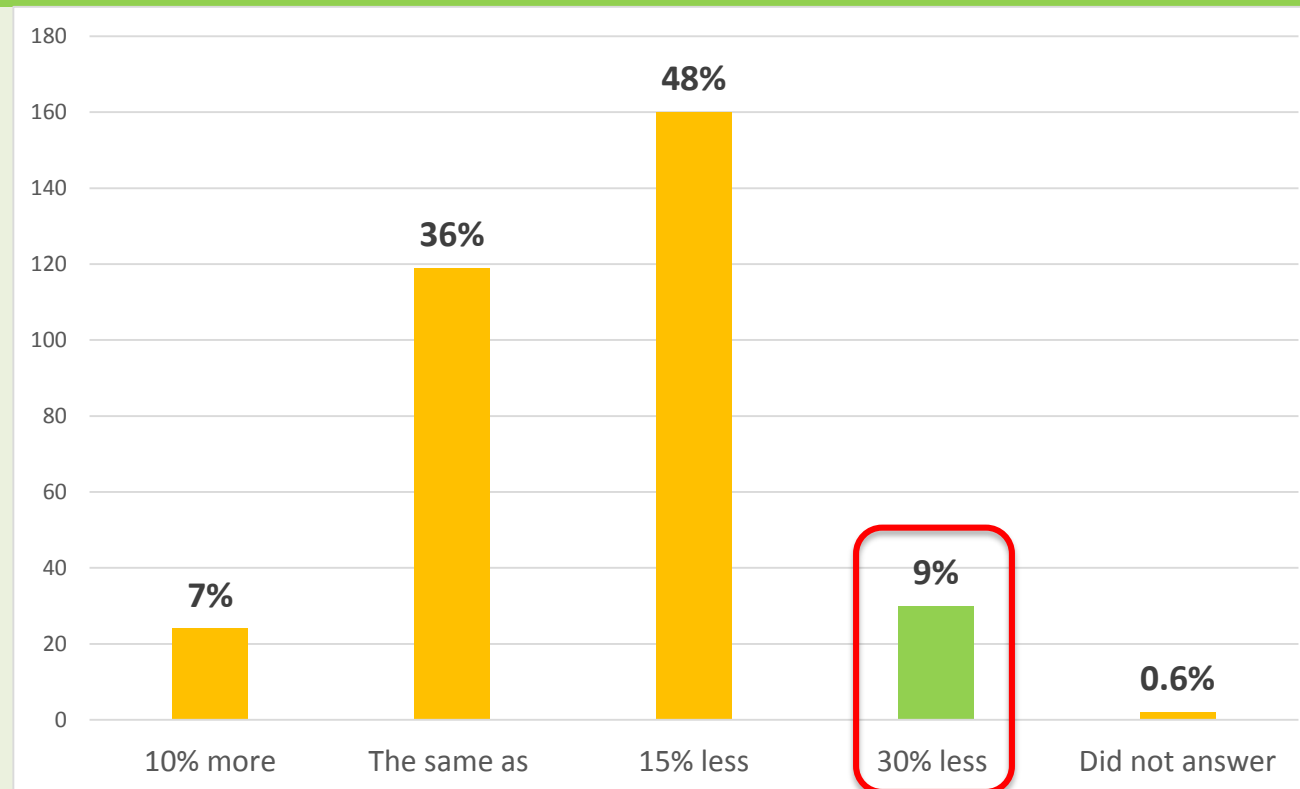


Results: Canadian vs U.S. Sugars Consumption

Question 2: *Added sugars consumption in Canada is approximately _____ than US consumption.*

Perception

Very few (9%) respondents are aware that added sugars consumption in Canada is approximately one-third (30%) less than US consumption.



Canadian vs U.S. Sugars Consumption

Reality

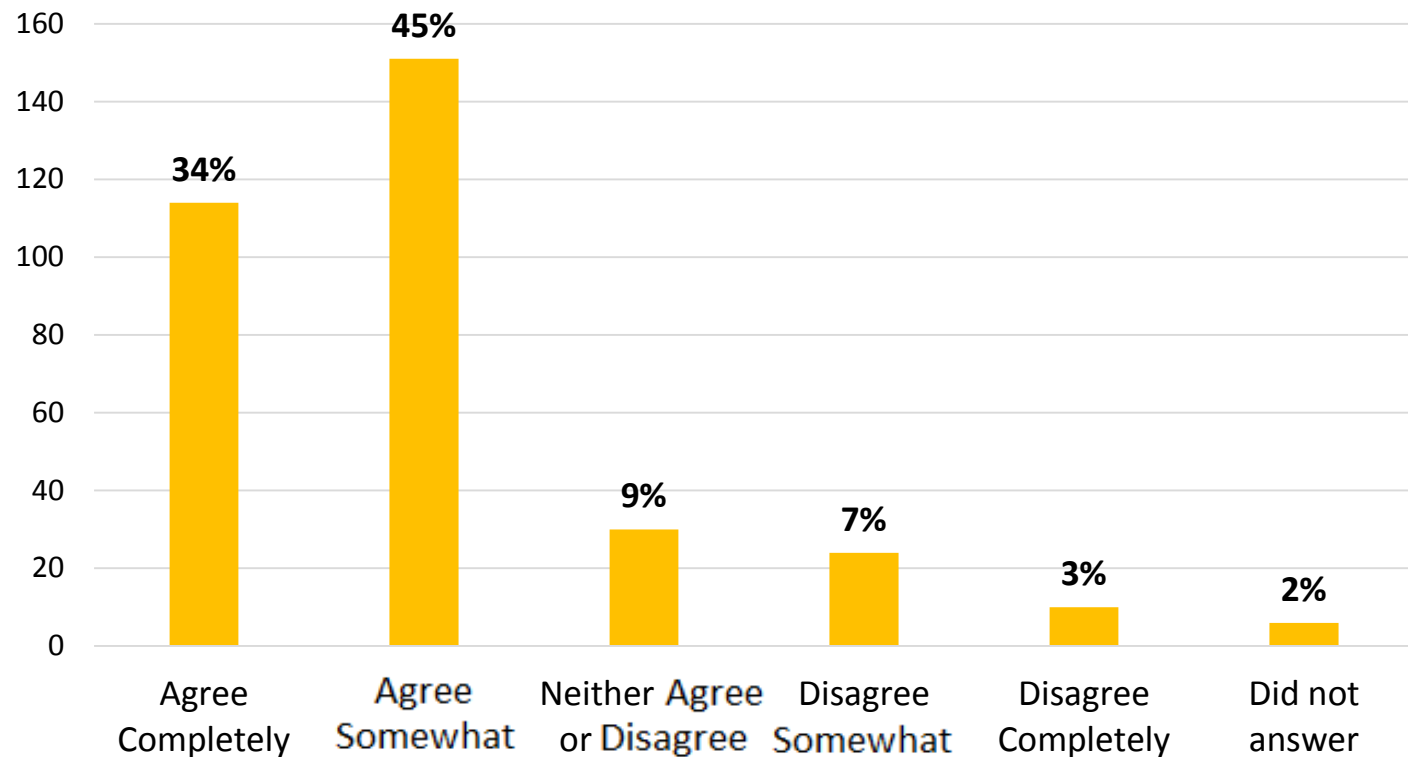
Comparison of Canadian and US Consumption Population average per person per day (added sugars estimated)	Canada (CCHS 2004)	US (NHANES 2003-04)
Total Calories	2073 Calories	2195 Calories
Total sugars (grams) – natural and added	110 g	133 g
Added sugars (grams) ^{1,2}	55 g	88 g
Added sugars (Calories)	220 Calories	352 Calories
Added sugars (tsp)	13 tsp	21 tsp
Added sugars (% Calories)	10.7%	15.9%

Results: Sugars Consumption and Obesity

Question 3: Please indicate how much you agree with the following statement (Circle one answer):
Added sugars consumption has contributed to rising rates of obesity in Canada.

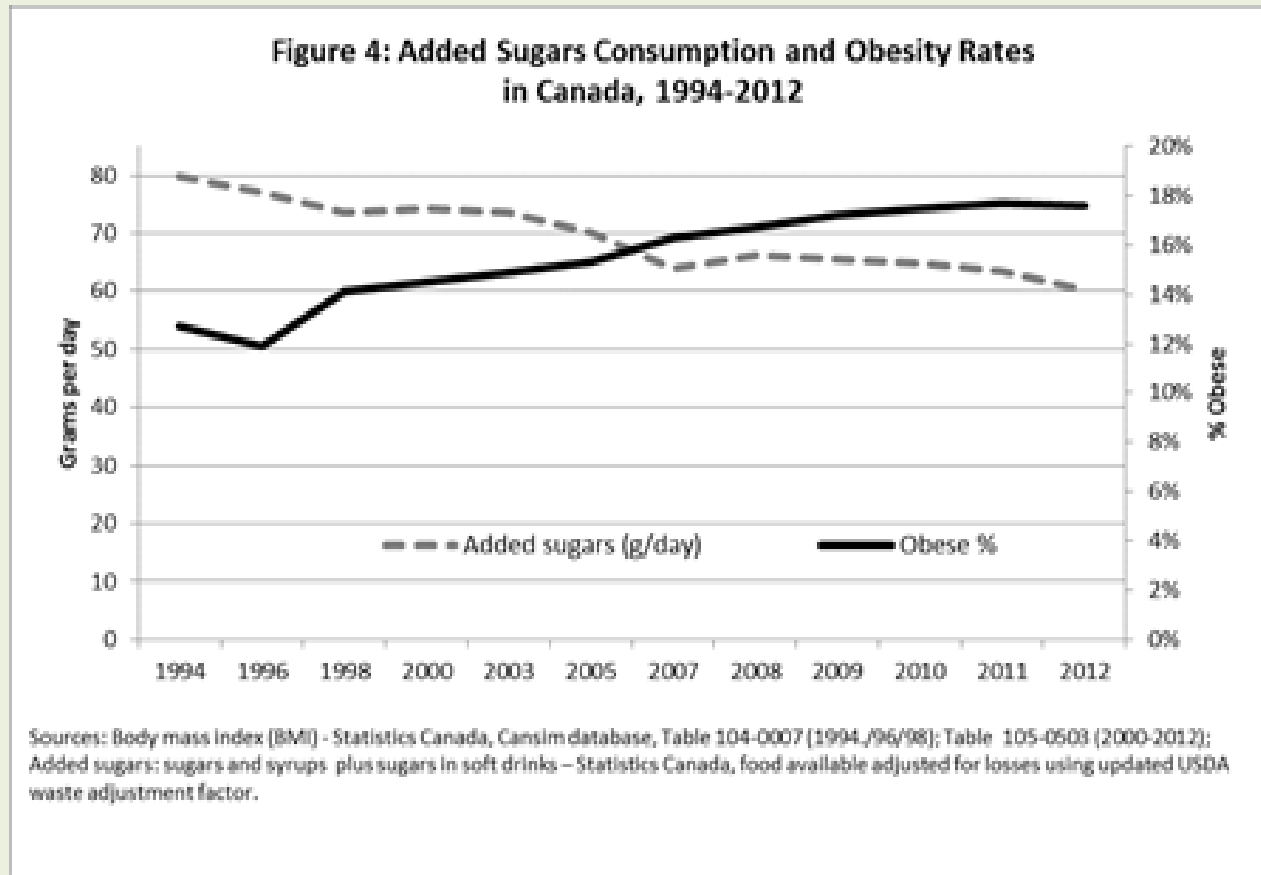
Perception

Over three-quarters (79%) of respondents believed that added sugars consumption has contributed to rising obesity rates in Canada.



Sugars Consumption and Obesity

Reality



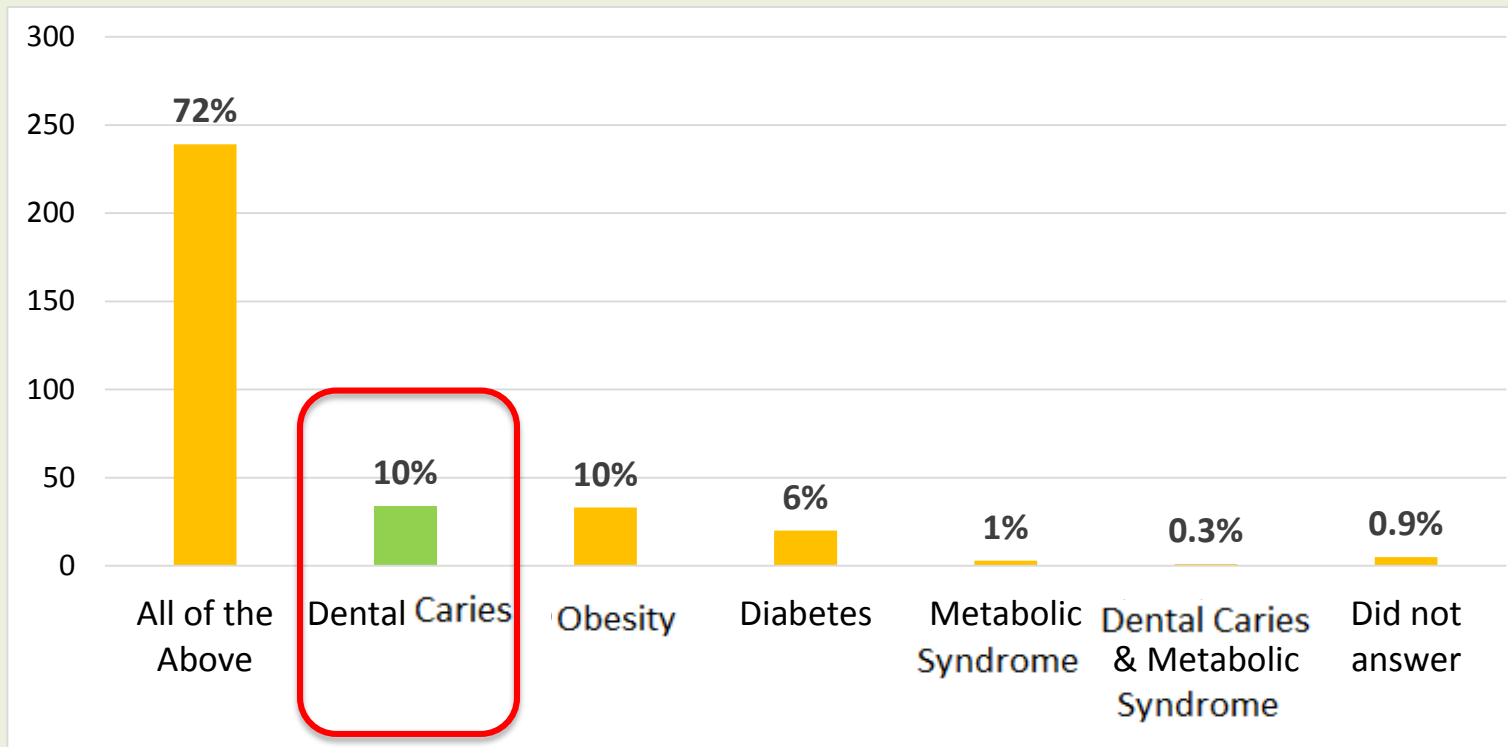
- Food availability trends show a decline in added sugars intake while obesity rates continue to rise.
- Scientific evidence from WHO, EFSA and recent systematic reviews show no unique effect of sugars compared to other carbohydrates or Calorie sources on body weight
- Data from the 2004 CCHS found higher total energy intake increased odds of obesity for men and women, but diet composition was generally not a factor.

Results: WHO Guideline on Sugars Intake

Question 4. *The World Health Organization 10% guideline for “free sugars” (i.e. all sugars and syrups added to foods plus sugars naturally present in fruit juice and concentrates) intake is based on evidence related to:*

Perception

Only 10 % of respondents correctly identified that the WHO 10% draft guideline for “free sugars” intake was based on evidence related to dental caries only.

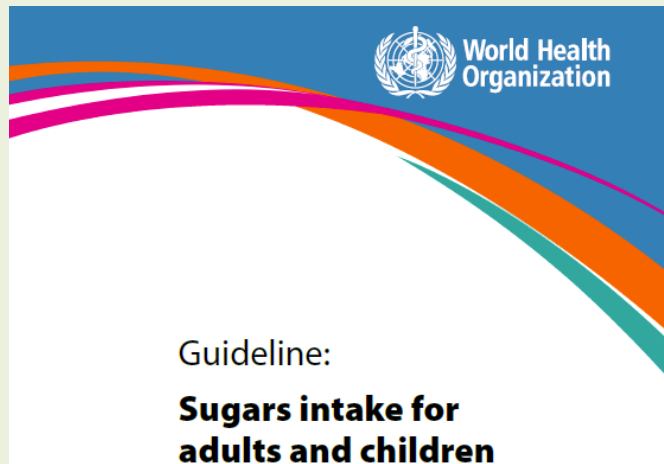


Results: WHO Guideline on Sugars Intake

Reality

The World Health Organization 10% guideline for “free sugars” intake is based on **observational evidence** related to **dental caries**, not obesity prevention or chronic disease.

The systematic review on body weight **did not** provide any evidence to support a **quantitative** limitation for "free sugars".



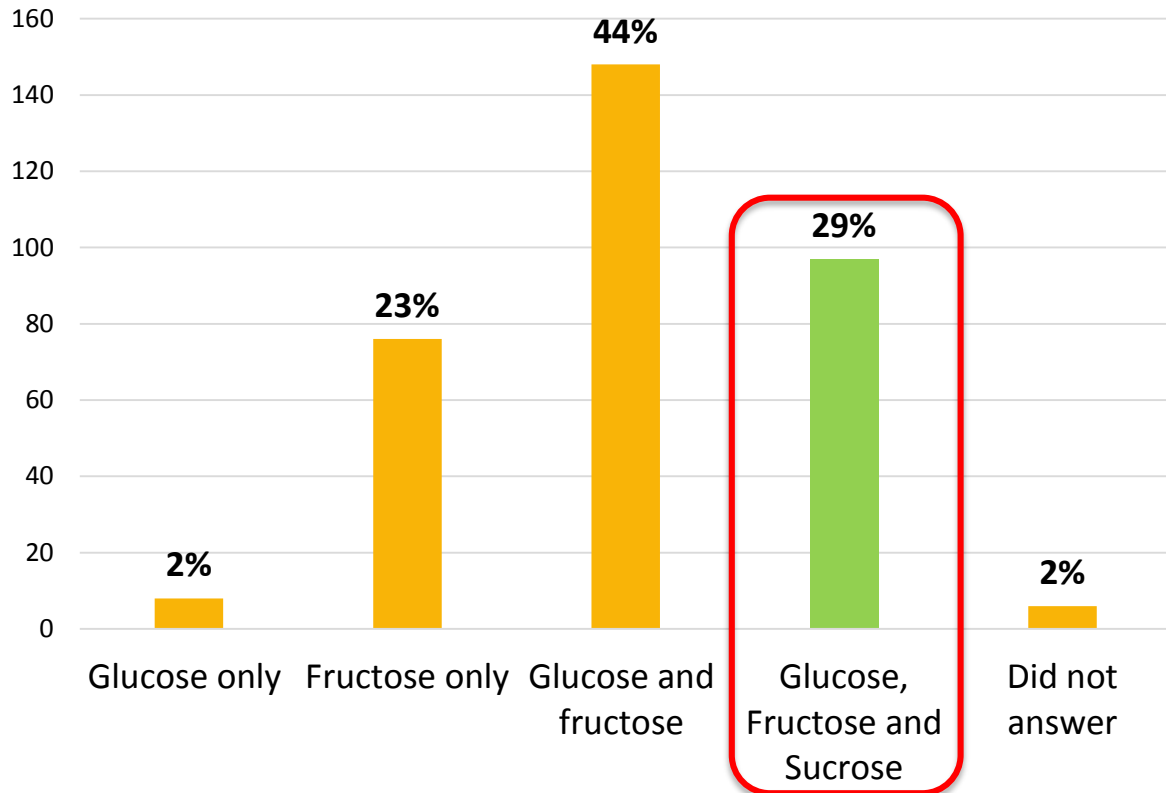
- Increasing or decreasing free sugars is associated with parallel changes in body weight, and the relationship is present regardless of the level of intake of free sugars. The excess body weight associated with free sugars intake results from excess energy intake.
- The recommendation to limit free sugars intake to less than 10% of total energy intake is based on moderate quality evidence from observational studies of dental caries.
- The recommendation to further limit free sugars intake to less than 5% of total energy intake is based on very low quality evidence from ecological studies in which a positive dose–response relationship between free sugars intake and dental caries was observed at free sugars intake of less than 5% of total energy intake.

Results: Sugars in Fruits and Vegetables

Question 5: The naturally occurring sugars in fruits and vegetables include _____.

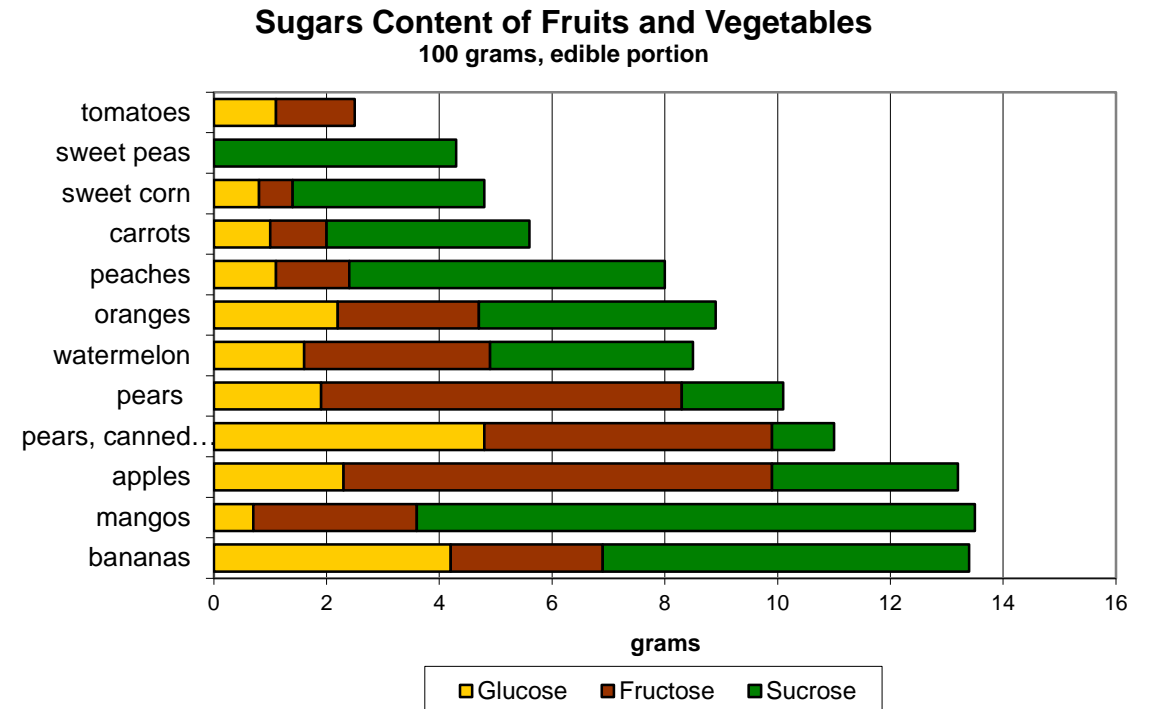
Perception

Less than one third (29%) of respondents knew that fruits and vegetables naturally contain glucose, fructose, and sucrose.



Reality

Almost all fruits and vegetables naturally contain sucrose, as well as glucose and fructose, in varying amounts



Conclusions

- This survey continued to reveal discrepancies between scientific evidence and health professionals' understanding of key issues related to sugars and health.
- These results are helpful in identifying and bridging knowledge gaps among health professionals.
- Future research will focus on best practices to help support health professionals communicate science-based nutrition information related to sugars to the media and the public.

Questions?



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