

Estimated intakes of added sugars in Canada and relationship to trends in body weight



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Introduction

- Consumption of added sugars in Canada is often reported to be higher than data suggest
- This occurs for several reasons, including incorrectly citing unadjusted national food supply (availability) data as actual consumption, using total sugars consumption to describe added sugars intakes, and citing US data when describing Canadian eating habits

Terminology

- Sugar** = sucrose (from sugar cane or sugar beet)
- Sugars and syrups** (*Statistics Canada category*) = sugar and sugar syrups, maple syrup, and honey, but not corn sweeteners, e.g. high fructose corn syrup or glucose syrup
- Added sugars** = all sugars added to foods, e.g. sugars and syrups, corn sweeteners, and other ingredients that act as a sweetener (e.g. concentrated fruit juice)
- Sugars** = all monosaccharides and disaccharides

Purpose

To estimate and trend added sugars consumption using both Statistics Canada availability data and Canadian Community Health Survey (CCHS) nutrition survey data

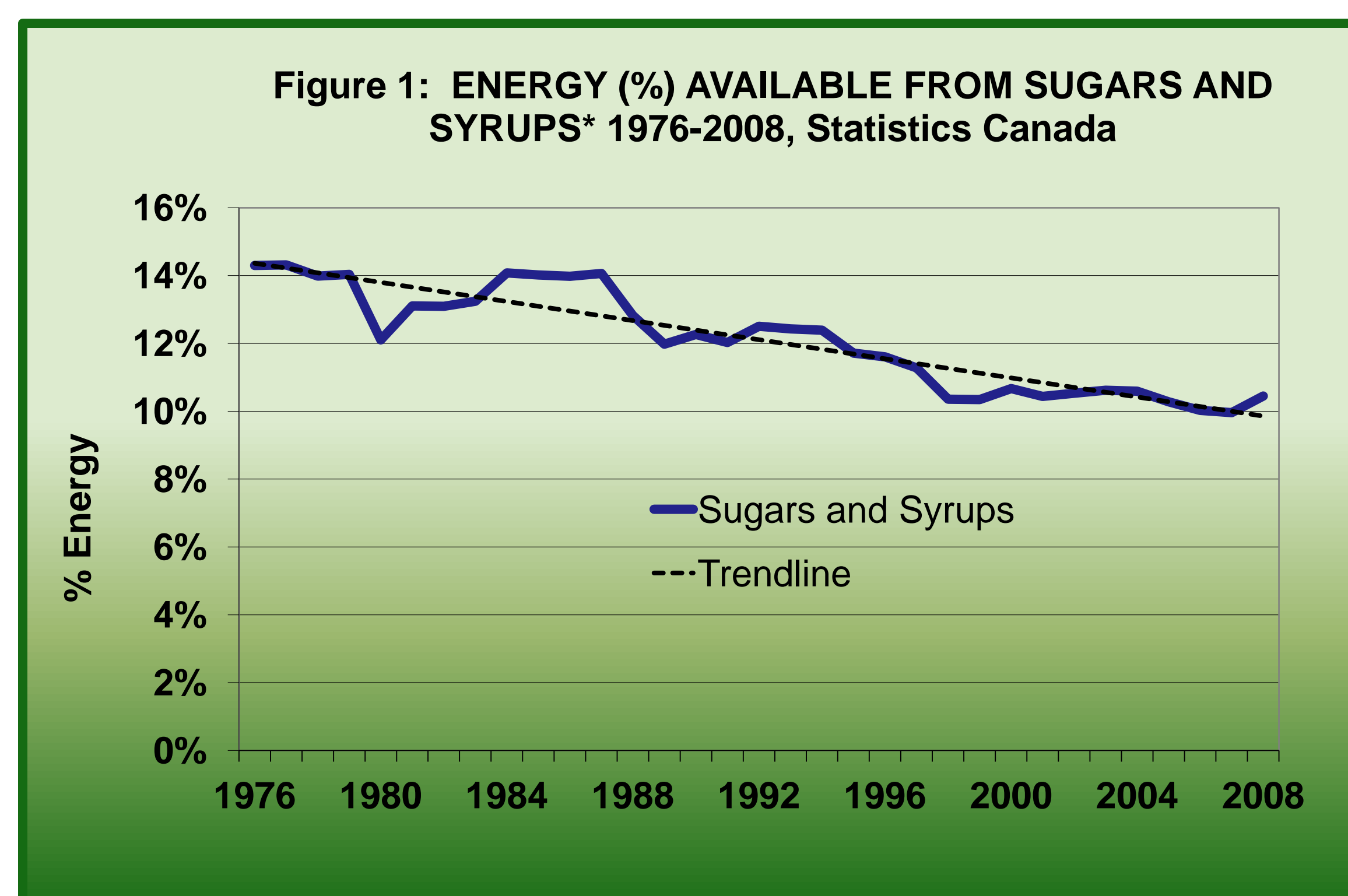
Methods

Statistics Canada availability data

- Statistics Canada publishes annual availability data on 'sugars and syrups' (i.e. sugar, honey and maple sugars), but not corn sweeteners [1] (Figure 1)
- Soft drink data provided an indirect estimate of corn sweetener availability (Figure 2)
- Consumption of added sugars was estimated by adjusting total availability of added sugars for retail, institutional and household losses

CCHS nutrition survey data

- In 2004, CCHS collected 24 hr dietary recall data from 35,000 Canadians [2]
- CCHS total sugars data were used to estimate added sugars consumption based on studies that have reported added sugars to account for approximately half of total sugars intake [3]
- Contribution of added sugars to total energy intake was also calculated using both availability data and CCHS data (Tables 1 & 2, respectively)



*Data excludes corn sweeteners (i.e. high fructose corn syrup / "glucose-fructose", glucose syrup, and dextrose)

Results

Added 'Sugars and Syrups' Consumption

- Consumption of added 'sugars and syrups' as a percent of total energy has declined over the past 3 decades from 14% to 10% (Figure 1)
- This decline in part reflects the replacement of sugar (sucrose) by high fructose corn syrup in sweetened beverages; therefore total added sugars intake has been relatively stable in Canada over the last 30 years

Added Sugars Consumption

- Results showed close agreement between Statistics Canada availability data and CCHS nutrition survey data
- Added sugars intakes were estimated to contribute 10 - 13% of total energy (Tables 1 & 2) and to average 53 g/day (Table 2)

Trends in Body Weight

- Statistics Canada availability data is the only trend data for estimates of added sugars intakes as CCHS has been completed only once
- Trends in added 'sugars and syrups' consumption plotted against obesity rates show an inverse correlation (Figure 3)
- This is consistent with current scientific literature, which does not support an association between body mass index and sugars consumption [4]
- Other countries, including Australia, the UK, and the US have also shown similar trends [5,6]

Table 1: CANADA ESTIMATED ENERGY AVAILABLE FROM TOTAL ADDED SUGARS, 2008, Statistics Canada

Sugars and syrups (kcal)	352
Soft drinks (HFCS) (kcal)	101 *
Total added sugars (kcal)	453
Total energy availability (kcal)	3372
% Energy total added sugars	13%

* Overestimate as does not correct for diet soft drinks (i.e., all soft drinks are considered caloric). Abbreviations: HFCS = high fructose corn syrup

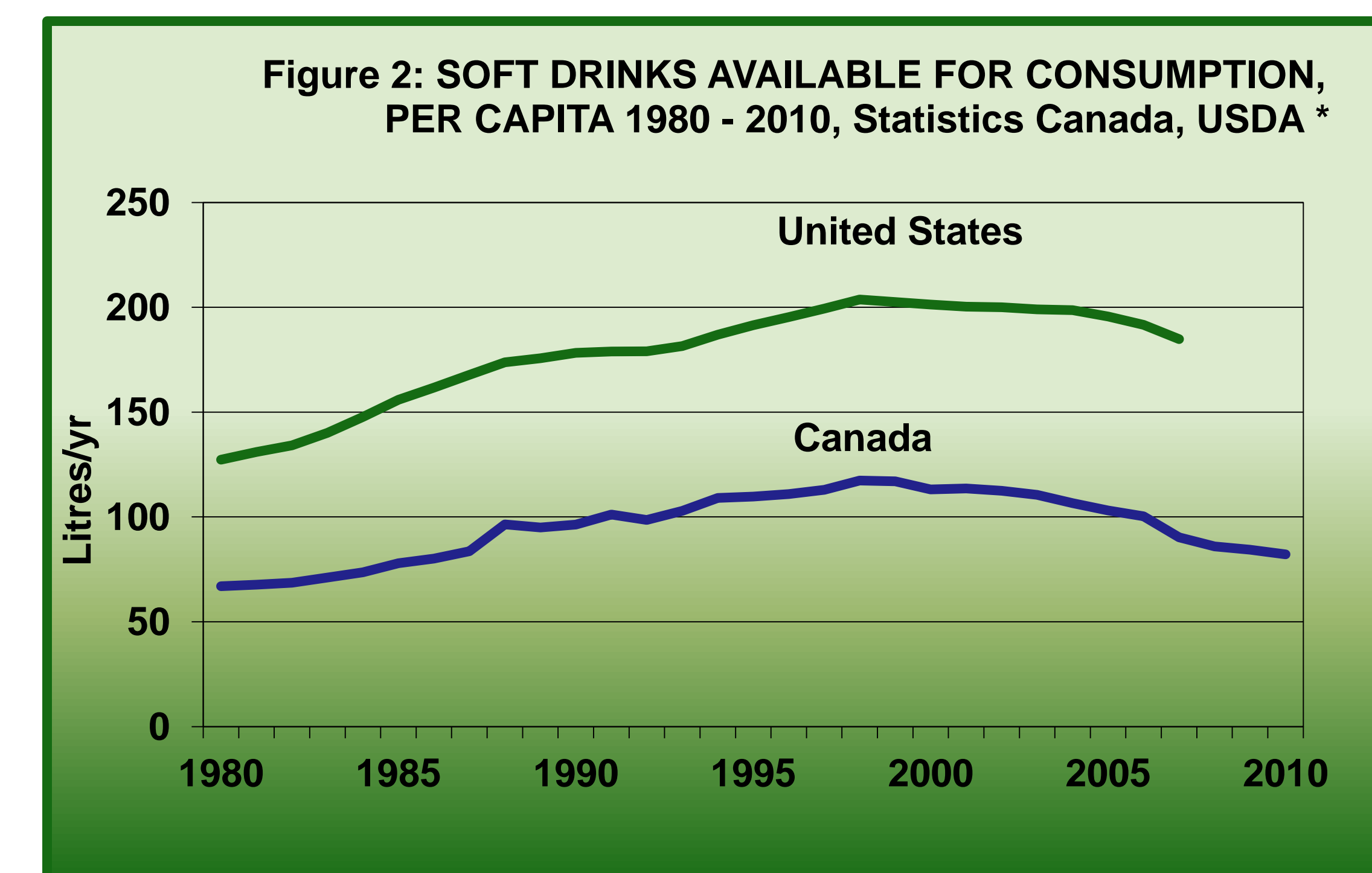
Table 2: CCHS 2004 SELF-REPORTED INTAKES OF CARBOHYDRATES AND SUGARS FOR CANADIAN ADULTS (19+ yrs)

	Total Energy (kcal/day)	Total Carbohydrates (% energy)	Total Sugars (g/day)	Total Sugars (kcal/day)	Total Sugars (% energy)	Added Sugars (% energy est*)	Added Sugars (g/day est*)
Female	1775	50	92	368	21	11	46
Male	2420	48	115	460	19	10	58
Weighted Average	2065	49	102	409	20	10	53

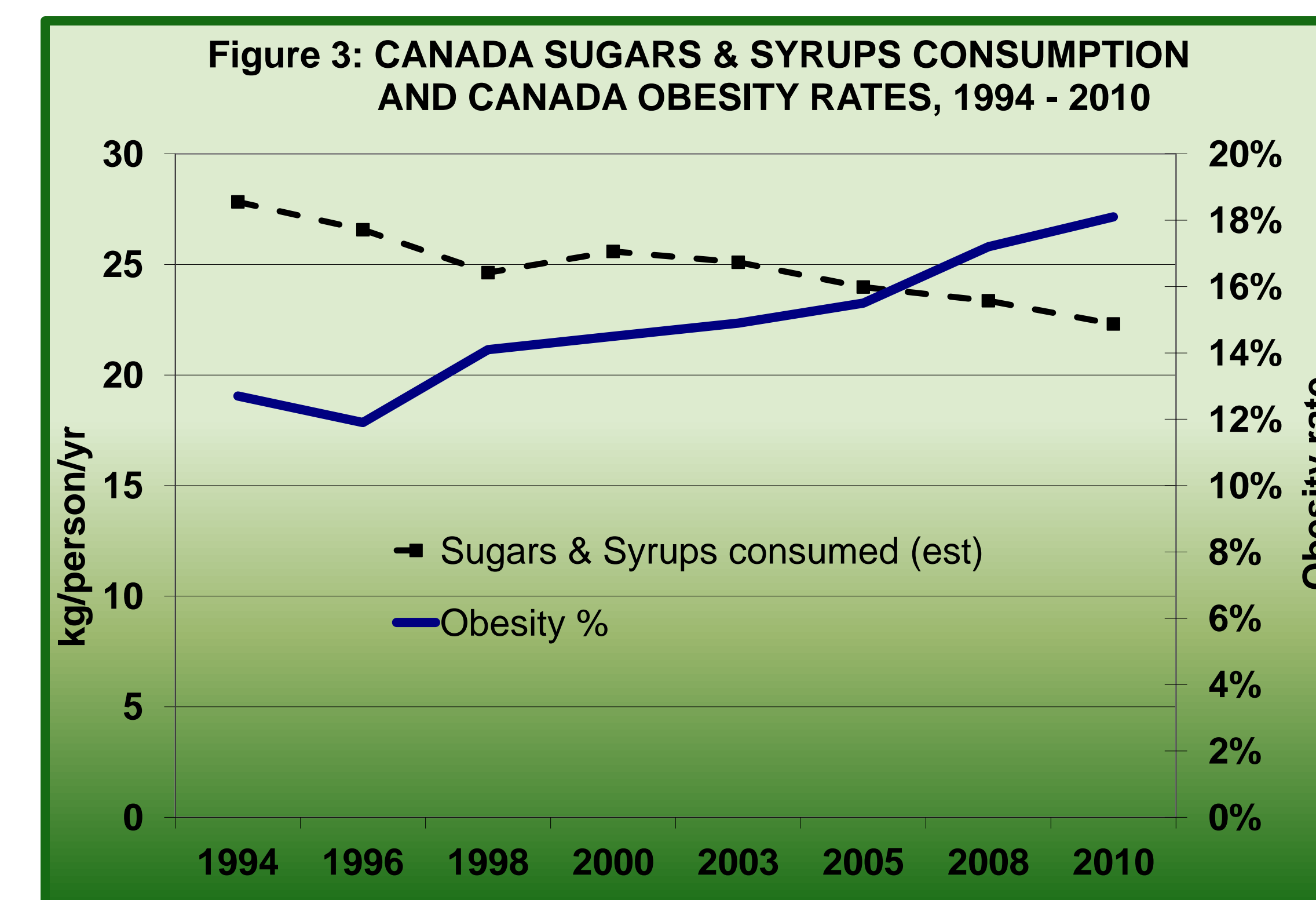
*Based on estimation that added sugars comprise approximately half of total sugars (3). Abbreviations: est = estimate

Conclusions & Significance

- Added sugars consumption in Canada is not increasing, contrary to common perception
- Estimated added sugars consumption in Canada is:
 - 10-13% of total energy
 - Approximately 53 g/ day
 - Stable or modestly declining as a % of total energy
 - Substantially below US levels



* US carbonated soft drinks per capita figures were calculated by USDA using industry data. This data was discontinued after 2007. Source: USDA, Economic Research Service, Food Availability: Miscellaneous Beverages, 2007. Abbreviation: USDA = United States Department of Agriculture.



Sources: Body mass index (BMI) - Statistics Canada, Canadian Community Health Survey (CCHS), 2000/2001, 2003, 2005, 2007-2010; National Population Health Survey (NPHS), 1994/1995, 1996/1997 and 1998/1999, cross sectional sample, health file (household component); National Population Health Survey (NPHS), 1994/1995 and 1996/1997, cross sectional sample, health file (North component); Sugars & Syrups consumed (estimated) - Statistics Canada, food available adjusted for losses. Abbreviations: est = estimate



References: 1) Statistics Canada, Food Statistics, 2011; 2) Health Canada, CCHS Cycle 2.2, 2004; 3) Glinsmann, HW Report from FDA's Sugar Task Force, FDA, 1986; 4) Ruxton, CH Crit Rev Food Sci, 2010.50(1):p1-19; 5) Barclay, AW Nutrients, 2011, 3(4): p491-504; 6) Welsh, JA Am J Clin Nutr, 2011.94(3):p726-34.

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