

Dietary Assessment

Intakes of nutrients and food categories in Canadian children across levels of sugars intake

L. Chiavaroli^{1,2}, Y. Wang³, M. Ahmed^{1,4}, A. P. Ng¹, C. DiAngelo³, S. Marsden³, J. L. Sievenpiper^{1,2,5,6}. ¹Department of Nutritional Sciences, Temerty Faculty of Medicine, University of Toronto, Toronto, ON; ²Toronto 3D Knowledge Synthesis and Clinical Trials Unit and Clinical Nutrition and Risk Factor Modification Centre, St. Michael's Hospital, Toronto, ON; ³Nutrition Information Service, Canadian Sugar Institute, Toronto, ON; ⁴Joannah and Brian Lawson Center for Child Nutrition, Temerty Faculty of Medicine, University of Toronto, Toronto, ON; ⁵Li Ka Shing Knowledge Institute, St. Michael's Hospital, Toronto, ON; ⁶Division of Endocrinology and Metabolism, St. Michael's Hospital, Toronto, ON;

Introduction: Dietary recommendations to reduce intake of sugars may influence the choices of sugars-containing foods and thus affect the intake of important sources of key micronutrients.

Objective: The objective of the study was to compare the intakes of nutrients and food sources stratified by different intakes of sugars in Canadian children.

Methods: The first-day 24-h dietary recalls from children (aged 2-8 years, n = 1,896) in the 2015 Canadian Community Health Survey-Nutrition Public Use Microdata File were used to compare intakes of nutrients and food categories across quintiles of total sugars [by %energy (%E)], after adjusting for misreporting and covariates.

Results: Canadian children consumed an average of 25.8 %E as total sugars (12.6 %E as free sugars and 9.5 %E as added sugars). Those with the lowest total sugars intakes (Q1) and those representing the median range of total sugars intakes (Q3) had greater intakes of protein, healthy fats, saturated fat, cholesterol, niacin, folate, zinc and sodium and lower vitamin C, while Q1 also had higher thiamin and lower potassium, compared to those with the highest intake (Q5). Compared to both Q1 and Q3, Q5 had greater intakes of confectionary and fruit juice. Those in Q3 generally had similar intakes compared to Q1, except Q1 had higher protein, some healthy fats and niacin, while Q3 had higher vitamin C, potassium, and riboflavin, which may principally reflect the higher intakes of fruit, unsweetened milks and yogurt in Q3. There was no difference in dietary fibre intakes across quintiles.

Conclusions: In Canadian children 2-8 y, the mean intake of total sugars was 25.8 %E, with about one third from added sugars (9.5 %E), and slightly less than half from free sugars (12.6 %E). Canadian children with lower intakes of sugars generally had greater intakes of multiple nutrients compared to those with the highest intakes, reflecting higher intakes of confectionary in the latter. Fewer differences were observed between those with the lowest intakes and those with intakes representing the median, where the latter had lower levels of protein, some healthy fats and niacin, but greater intake of vitamin C, potassium and riboflavin, reflecting the greater intakes of fruits, unsweetened milks and yogurts.

Significance: Strategies to reduce free sugars intake in children with high sugars intakes should be explored. Overall nutrient intake should be considered when making food choices to aim for an overall balanced diet including intakes of key nutrients in children.

Funded by: Mitacs