

Abstract Title:

The Canadian Healthy Eating Index as a measure of nutrient intake change in a lifestyle intervention for metabolic syndrome

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Objectives: The Canadian Healthy Eating Index (HEI-C) is a measure of diet quality that examines 11 adequacy and moderation components on a 100-point scale and could be used to assess changes in food behaviours during diet interventions in patients at cardiometabolic risk. This sub-study of the Canadian Health Advanced by Nutrition and Graded Exercise (CHANGE) feasibility study, a primary care intervention for patients with metabolic syndrome, evaluated the degree to which HEI-C components were associated with nutrient intakes in the first 3 months.

Methods: Two-hundred and ninety-three participants were recruited. At baseline and after 3 months, dietary data were collected from all participants by dietitians using 2, 24-hour multi-pass recalls to calculate HEI-C; average nutrient intakes were assessed using ESHA software. Changes in HEI-C scores were examined using paired t-tests and associations between HEI-C scores and intakes of relevant nutrients were examined by Pearson correlation.

Results: At 3 months, improvements were observed for the total HEI-C score (10.8±14.9 points, p<0.001, n=255) and HEI-C component scores significantly improved for *total vegetables and fruits, saturated fat, sodium, and other foods*. Total HEI-C score was moderately correlated with fibre, saturated fat, vitamin C, magnesium, potassium, and sodium at baseline and 3 months ($|0.221| < r_{\text{total grains and carbohydrates}} = 0.50$, p<0.001), and *milk and alternatives* and calcium ($r = 0.66$, p<0.001) were observed from baseline to 3 months; other HEI-C components and nutrients were not strongly correlated.

Conclusions: In the CHANGE Program, the HEI-C components identified dietary behaviours that changed at 3 months but were not strongly associated with changes in relevant nutrient intakes.

Significance to the field of dietetics: The HEI-C may provide a foundation for further development of a diet assessment tool that can be used to assess the effectiveness of diet interventions for clients at cardiometabolic risk. The HEI-C cannot substitute for nutrient analysis.