

Healthy Cities conference abstract submission

Title: Characterizing intra-individual variation in energy intake

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Nutritional epidemiology forms the basis of nutrition guidelines, recommendations, and other related policies. Methods are informed by biostatistics, which often require key assumptions are met for specific analyses. While these assumptions may be met for overall samples or smaller age/sex sub-groups, it is not clear whether assumptions hold for marginalized groups. We sought to examine intra-individual variation in energy intake (i.e., day-to-day variation) according to sociodemographic factors, including household food security. Data from the 2004 and 2015 Canadian Community Health Surveys, Nutrition focus were used, including only 24-hour dietary recall data for the sub-samples of adult participants who completed two recalls. Adults experiencing household food insecurity reported significantly greater energy intake variation (i.e., difference in energy intake between two recalls) compared to adults living in food secure households. Food frequency questionnaires, a common dietary assessment tool for determining health risks associated with various dietary patterns, assumes that day-to-day variation for individuals represents random error. Our findings demonstrate that assumption is incorrect, as day-to-day variation is associated with food security. These findings have important implications for improving biostatistical methods as well as the application of findings to marginalized groups. (This research is funded by a Canadian Institutes of Health Research Early Career Investigator Award to Dr. Natalie Riediger)