Letters to the Editor

Food Frequency Questionnaires: Not Irrelevant Yet

To the Editors: Kristal et al. (1) contend that the food frequency questionnaire (FFQ) be abandoned in epidemiologic studies of cancer for three reasons: (a) a growing lack of consistency within and across studies of diet and cancer risk; (b) poor correlations between the FFQ’s measure of protein and total energy with urinary nitrogen excretion and doubly labeled water, respectively; and (c) one published account of a significant association of dietary fat with breast cancer risk when assessed by diet records collected from participants on seven consecutive days but not when assessed by an FFQ. One could reasonably counter the authors’ arguments.

First, the difficulty in estimating dietary factors and cancer risk with consistency is due foremost to our poor understanding of the pathophysiology of this heterogeneous disease. The relevant window of exposure during which dietary factors exert their effects likely occurs decades before clinical onset: our inability to characterize this window, rather than our inability to measure diet accurately with an FFQ, is our Achilles heel. Indeed, characterizing this relevant window is the basis of several recent investigations that focus on early life (2) and in utero (3, 4) exposures. In contrast, effect estimates from studies of diet and coronary heart disease, a better elucidated pathophysiology, have been consistent when diet was assessed by a FFQ. A case in point is for the exposure, trans fat, which has now been assigned permanent residence status on food labels in the United States. Second, biomarkers, such as RBC and plasma folate concentrations, showed acceptable correlations when compared against total folate intake assessed by an FFQ: 0.55 (5) and 0.63 (6), respectively. These correlation coefficients are reasonable given that the peripheral circulation is an inadequate proxy for biologically relevant tissue levels, and that other metabolic factors, and not just dietary intake, influence the circulatory level of these nutrients. Last, consecutive days of dietary recording may result in decreased within-person variation in nutrient intake from highly correlated food intake on these days (7). The effect would be an exaggerated between-person variation in intake, which may explain the statistically significant association with breast cancer observed by the authors when diet was assessed with diet records (8).

The authors conclude “we should be very circumspect about the analyses of current studies that have used FFQs for dietary assessments”. This places the authors’ own recent publications (9, 10) that used FFQs in very good company.

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References
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