

An Unjustified Conclusion from Self-report-based Estimates of Energy Intake



To the Editor:

Although we agree with Ladabaum et al¹ that obesity is a major health problem, we do not believe that any conclusion can be justified from their data as to whether the increase in body weight over the past 2 decades is primarily due to an increase in energy intake or a decrease in energy expenditure. They base their conclusion on their analysis of National Health and Nutrition Examination Survey (NHANES) dataset, indicating that energy intake did not increase during this period while self-reported leisure-time activity decreased. Unfortunately, the NHANES data relied on self-reported energy intake as a measure of energy intake.

Self-reported energy intake has been shown repeatedly to be an invalid measure of energy intake.² Approximately a quarter century ago, investigators using doubly labeled water³ concluded that “current methods of self-reported energy intake are not recommended for use in obesity research.” Last year, Archer et al⁴ found that “Across the 39-year history of the NHANES, energy intake data on the majority of respondents (67.3% of women and 58.7% of men) were not physiologically plausible.” A recent study⁵ “pooled data from 5 large validation studies of dietary self-report instruments” and found pooled squared correlations between self-reported energy intake and “true” energy intake ranged from 0.04 to 0.10, indicating no more than 10% shared variance. Given this extreme lack of validation of self-reported energy intake as a measure of energy intake, no scientific conclusions can be credibly drawn about energy intake derived from self-reported energy intake measures.

Because the conclusions reached by Ladabaum et al¹ are based on invalid measures of energy intake, the article does not meet reasonable standards for scientific inferences, which contradicts recent trends toward evidence-based medicine and may jeopardize the public’s faith in biomedical science. We are hopeful that we, Ladabaum and

colleagues, and others in the field can work together to produce data of the quality that can support scientific conclusions that a problem as important as obesity deserves.

David A. Levitsky, PhD^a
Andrew W. Brown, PhD^b
Barbara C. Hansen, PhD^c
Richard L. Atkinson, MD^d
Nuala Byrne, PhD^e
Lawrence J. Cheskin, MD^f
David B. Allison, PhD^b

^aDivision of Nutritional Sciences and Department of Psychology
Cornell University
Ithaca, NY

^bOffice of Energetics and Nutrition Obesity Research Center
University of Alabama at Birmingham
Birmingham

^cDepartment of Internal Medicine and Pediatrics
Morsani College of Medicine, University of South Florida
Tampa

^dObetech Obesity Research Center
Richmond, Va

^eBond Institute of Health and Sport
Bond University
Queensland, Australia

^fDepartment of Health, Behavior, and Society and
Johns Hopkins Global Obesity Prevention Center
Johns Hopkins Bloomberg School of Public Health
Baltimore, Md

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