



HHS Public Access

Author manuscript

Ann Intern Med. Author manuscript; available in PMC 2022 February 04.

Published in final edited form as:

Ann Intern Med. 2015 March 03; 162(5): 393. doi:10.7326/L15-5192-5.

LETTERS

Lydia A. Bazzano, MD, PhD, MPH, Tian Hu, MD, MS

Tulane University School of Public Health and Tropical Medicine, New Orleans, Louisiana

IN RESPONSE:

We agree wholeheartedly with Drs. Burns and Miyashita that physical activity is a vital component of weight management and cardiovascular health. In our clinical trial, physical activity levels did not significantly differ between the groups at baseline or during the intervention. Although it was not the aim of our study, future studies should examine whether physical activity levels modify the differences in efficacy of low-fat and low-carbohydrate diets.

Drs. Donzelli and Lafranconi raise several concerns about low-carbohydrate diets. They note that a meta-analysis showed that low-carbohydrate and low-fat diets were similarly effective for weight loss at 12-month follow-up (1). However, unlike our study, Johnston and colleagues' review—which focused on such named low-carbohydrate diets as Atkins and Zone—did not examine cardiovascular disease risk factors. They also point out that a Mediterranean diet may have advantages over a low-carbohydrate diet (2). Although our study was not designed to examine this question, in DIRECT, Mediterranean and low-carbohydrate diet groups experienced more favorable postintervention effects than low-fat diet group. Drs. Donzelli and Lafranconi note that low-carbohydrate diets may be associated with higher adult body mass index, all-cause mortality, or both in observational studies. However, evidence from clinical trials does not support an increased body mass index (1–3), and many observational cohort studies have identified no association between low-carbohydrate diets and mortality (4, 5). Finally, Drs. Donzelli and Lafranconi state that low-carbohydrate and high-protein diets are environmentally unsustainable at a population level. We disagree. Proteins from legumes, nuts, and seeds provide a potentially sustainable pathway to diets higher in protein and healthy fats.

Dr. Santulli stated that weight loss differed significantly only at 3- and 6-month follow-up but not at 12 months and that the only variables that differed significantly between the 2 diets at 12-month follow-up were high-density lipoprotein cholesterol levels and 10-year Framingham Risk Score; we disagree. In fact, Table 3 in our article shows that changes in body weight, lean mass, fat mass, total-high-density lipoprotein cholesterol ratio, and C-reactive protein levels also differed significantly between the groups at 12 months. The Framingham Risk Score differed significantly at 3, 6, and 12 months. Sixty of our participants were hypertensive. The numbers of hypertensive and normotensive participants did not differ significantly by diet group.

Disclosures: Disclosures can be viewed at www.acponline.org/authors/icmje/ConflictOfInterestForms.do?msNum=M14-0180.

Dr. Skeaff and colleagues' concern about underreporting in our trial was based on mean daily energy intake reported at 3, 6, and 12 months. These quantities concur with the caloric intake and weight loss results reported by 23 studies of low-fat and low-carbohydrate diets in a meta-analysis of randomized, controlled trials (3). Participants in behavioral dietary trials are free-living volunteers from the community, and their exact caloric intake and output cannot be measured in the idealized manner of physiologic studies done on metabolic wards. In terms of the speculation that the widespread promotion of low-carbohydrate diets for weight loss may have influenced a difference in weight loss between the diets, we argue that low-fat diets have been far more heavily promoted for many decades than low-carbohydrate diets.

References

1. Johnston BC, Kanters S, Bandayrel K, Wu P, Naji F, Siemieniuk RA, et al. Comparison of weight loss among named diet programs in overweight and obese adults: a meta-analysis. *JAMA* 2014;312:923–33. doi:10.1001/jama.2014.10397 [PubMed: 25182101]
2. Schwarzfuchs D, Golan R, Shai I. Four-year follow-up after two-year dietary interventions [Letter]. *N Engl J Med* 2012;367:1373–4. doi: 10.1056/NEJMc1204792 [PubMed: 23034044]
3. Hu T, Mills KT, Yao L, Demanelis K, Eloustaz M, Yancy WS Jr, et al. Effects of low-carbohydrate diets versus low-fat diets on metabolic risk factors: a meta-analysis of randomized controlled clinical trials. *Am J Epidemiol* 2012;176 Suppl 7:S44–54. doi:10.1093/aje/kws264 [PubMed: 23035144]
4. Fung TT, van Dam RM, Hankinson SE, Stampfer M, Willett WC, Hu FB. Low-carbohydrate diets and all-cause and cause-specific mortality: two cohort studies. *Ann Intern Med* 2010;153:289–98. doi:10.7326/0003-4819-153-5-201009070-00003 [PubMed: 20820038]
5. Nilsson LM, Winkvist A, Eliasson M, Jansson JH, Hallmans G, Johansson I, et al. Low-carbohydrate, high-protein score and mortality in a northern Swedish population-based cohort. *Eur J Clin Nutr* 2012;66:694–700. doi:10.1038/ejcn.2012.9 [PubMed: 22333874]