



RESPONSE TO COMMENT ON QIAN ET AL.

Metabolic Effects of Monounsaturated Fatty Acid–Enriched Diets Compared With Carbohydrate or Polyunsaturated Fatty Acid–Enriched Diets in Patients With Type 2 Diabetes: A Systematic Review and Meta-analysis of Randomized Controlled Trials. *Diabetes Care* 2016;39:1448–1457

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We thank Schwingshackl and Hoffmann (1) for their insights and for putting our article into the broader context of other scientific literature. As the authors mentioned, our study sought to address a knowledge gap noted in a prior position statement regarding whether monounsaturated fatty acids (MUFA) are an important constituent of optimal nutrition therapy for patients with type 2 diabetes (2,3). Prior to our report, most of the meta-analyses included studies that had relatively short duration (~6 weeks), and it was unclear whether these metabolic benefits would persist in the long term (4,5). In recent years, larger randomized controlled trials with longer durations of follow-up and improved dietary adherence have indeed shown that these benefits are sustainable and in the PREDIMED trial (PREvención con Dieta MEDiterránea) translate into reductions in clinical end points (6). We agree with Schwingshackl and Hoffmann (1) in urging future nutritional studies to also examine the food sources of certain nutrients, including MUFA. In trials, it is possible to make explicit comparisons between macronutrients (i.e., MUFA vs. carbohydrates or polyunsaturated

fatty acids) and control for their respective food sources (plant vs. animal).

More broadly, we believe our analysis also reflects the importance of examining nutrients in the context of foods and dietary patterns. In our meta-analysis, foods frequently consumed in the high-MUFA or Mediterranean-style intervention groups included olive oil, nuts, and avocados, which also include a plethora of other beneficial nutrients such as phenolic antioxidants, phytochemicals, and fiber. This notion is consistent with the message emphasized in the 2015–2020 *Dietary Guidelines for Americans* (7) highlighting the consumption of healthful foods and dietary patterns rather than isolated nutrients. These types of recommendations will also be easier for patients to understand and incorporate into their lifestyle.

Duality of Interest. No potential conflicts of interest relevant to this article were reported.

References

1. Schwingshackl L, Hoffmann G. Comment on Qian et al. Metabolic effects of monounsaturated fatty acid–enriched diets compared with carbohydrate or polyunsaturated fatty acid–

enriched diets in patients with type 2 diabetes: a systematic review and meta-analysis of randomized controlled trials. *Diabetes Care* 2016;39:1448–1457 (Letter). *Diabetes Care* 2016;39:e204. DOI: 10.2337/dci16-1613

2. Evert AB, Boucher JL, Cypress M, et al. Nutrition therapy recommendations for the management of adults with diabetes. *Diabetes Care* 2014;37(Suppl. 1):S120–S143

3. Qian F, Korat AA, Malik V, Hu FB. Metabolic effects of monounsaturated fatty acid–enriched diets compared with carbohydrate or polyunsaturated fatty acid–enriched diets in patients with type 2 diabetes: a systematic review and meta-analysis of randomized controlled trials. *Diabetes Care* 2016;39:1448–1457

4. Garg A. High-monounsaturated-fat diets for patients with diabetes mellitus: a meta-analysis. *Am J Clin Nutr* 1998;67(Suppl.):S77S–S82S

5. Shah M, Adams-Huet B, Garg A. Effect of high-carbohydrate or high-cis-monounsaturated fat diets on blood pressure: a meta-analysis of intervention trials. *Am J Clin Nutr* 2007;85:1251–1256

6. Estruch R, Ros E, Salas-Salvadó J, et al.; PREDIMED Study Investigators. Primary prevention of cardiovascular disease with a Mediterranean diet. *N Engl J Med* 2013;368:1279–1290

7. U.S. Department of Health and Human Services and U.S. Department of Agriculture. 2015–2020 *Dietary Guidelines for Americans*. 8th edition. Washington, DC, U.S. Department of Health and Human Services, December 2015. Available from <http://www.health.gov/DietaryGuidelines>. Accessed 2 August 2016

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