

LETTER

Open Access



Reply to: Meta-analysis of vitamin D supplementation and hemoglobin concentration: methodological faults obscure the interpretation of the data

Seyyed Mostafa Arabi, Golnaz Ranjbar, Leila Sadat Bahrami and Abdolreza Norouzy*

Dear Editor,

We would like to thank Mr. Raeisi-Dehkordi, et al. [1] for their interest and knowledgeable comments on our study.

We have followed the PRISMA guidelines according to the most recent research standards (page 3 of the article). PICOS was also used in the study design (amendments are made on page 2). While it is not compulsory to submit all systematic reviews at PROSPERO, all the principles mentioned in PROSPERO were followed. In the corrected version of the paper [2], we have clarified that no restrictions were placed on the gender, race, and geographical distribution of the individuals enrolled in the study. However, age restrictions were places such that the studies carried out in subjects with a mean age of ≥ 17.5 years old were included. Also, the type of supplementation has been corrected to include all types of vitamin D supplementation and not just oral vitamin D supplementation. According to the Cochrane handbook, including multiple comparisons from one study with a shared intervention group to the meta-analysis may lead to bias [3]. However, in many published articles this method has been used. Therefore, we decided to use this method based on previous research [4, 5]. According to your suggestion, the stated combination

of supplementary studies [6, 7] were removed from the final analysis and a new Forrest plot was introduced. However, no changes in the results were observed (Figs. 2, 3, 4 and 5).

Authors' contributions

The author(s) read and approved the final manuscript.

Declarations

Competing interests

None of the authors have any conflict of interest to declare.

Published online: 08 April 2021

References

1. Zimorovat A, Mohammadi-Sartang M, Barati-Boldaji R, et al. Meta-analysis of vitamin D supplementation and hemoglobin concentration: methodological faults obscure the interpretation of the data. *Nutr J.* 2021;20:22. <https://doi.org/10.1186/s12937-021-00681-w>.
2. Arabi SM, Ranjbar G, Bahrami LS, et al. Correction to: The effect of vitamin D supplementation on hemoglobin concentration: a systematic review and meta-analysis. *Nutr J.* 2021;20:21. <https://doi.org/10.1186/s12937-021-00679-4>.
3. Higgins JP, Thomas J, Chandler J, Cumpston M, Li T, Page MJ, et al. *Cochrane handbook for systematic reviews of interventions*: Wiley; 2019. 16. 5.4 How to include multiple 173 groups from one study. Available from: https://handbook-5-174-1.cochrane.org/chapter_16/16_5_4_how_to_include_multiple_groups_from_one_study.htm
4. Jackson JK, Patterson AJ, MacDonald-Wicks LK, Oldmeadow C, McEvoy MA. The role of inorganic nitrate and nitrite in cardiovascular disease risk factors: a systematic review and meta-analysis of human evidence. *Nutr Rev.* 2018; 76(5):348–71.
5. Mazidi M, Rezaie P, Vatanparast H. Impact of vitamin D supplementation on C-reactive protein; a systematic review and meta-analysis of randomized controlled trials. *BMC Nutr.* 2018;4(1):1.
6. Dahlquist DT, Stellingwerff T, Dieter BP, McKenzie DC, Koehle MS. Effects of macro- and micronutrients on exercise-induced hepcidin response in highly trained endurance athletes. *Appl Physiol, Nutr Metab.* 2017;42(10):1036–43.
7. Hennigar SR, Gaffney-Stomberg E, Lutz LJ, Cable SJ, Pasiakos SM, Young AJ, et al. Consumption of a calcium and vitamin D-fortified food product does not affect iron status during initial military training: a randomised, double-blind, placebo-controlled trial. *Br J Nutr.* 2016;115(4):637–43.

This reply refers to the comment available at <https://doi.org/10.1186/s12937-021-00681-w>.

* Correspondence: Norouzya97@gmail.com

Metabolic Syndrome Research Center, Department of Nutrition, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad 91179481564, Iran



© The Author(s). 2021 **Open Access** This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>. The Creative Commons Public Domain Dedication waiver (<http://creativecommons.org/publicdomain/zero/1.0/>) applies to the data made available in this article, unless otherwise stated in a credit line to the data.

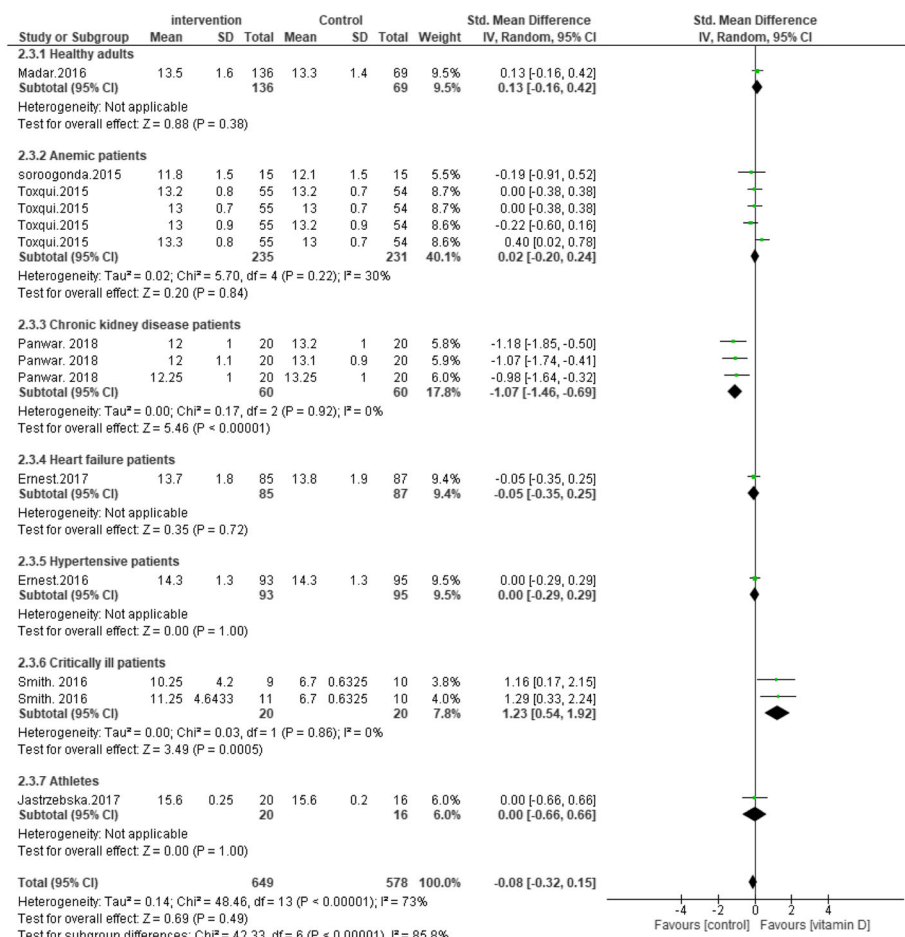


Fig. 2 Forest plot showing results of a meta-analysis on the effects of vitamin D supplementation on hemoglobin. Data were reported as SMDs with 95% CIs

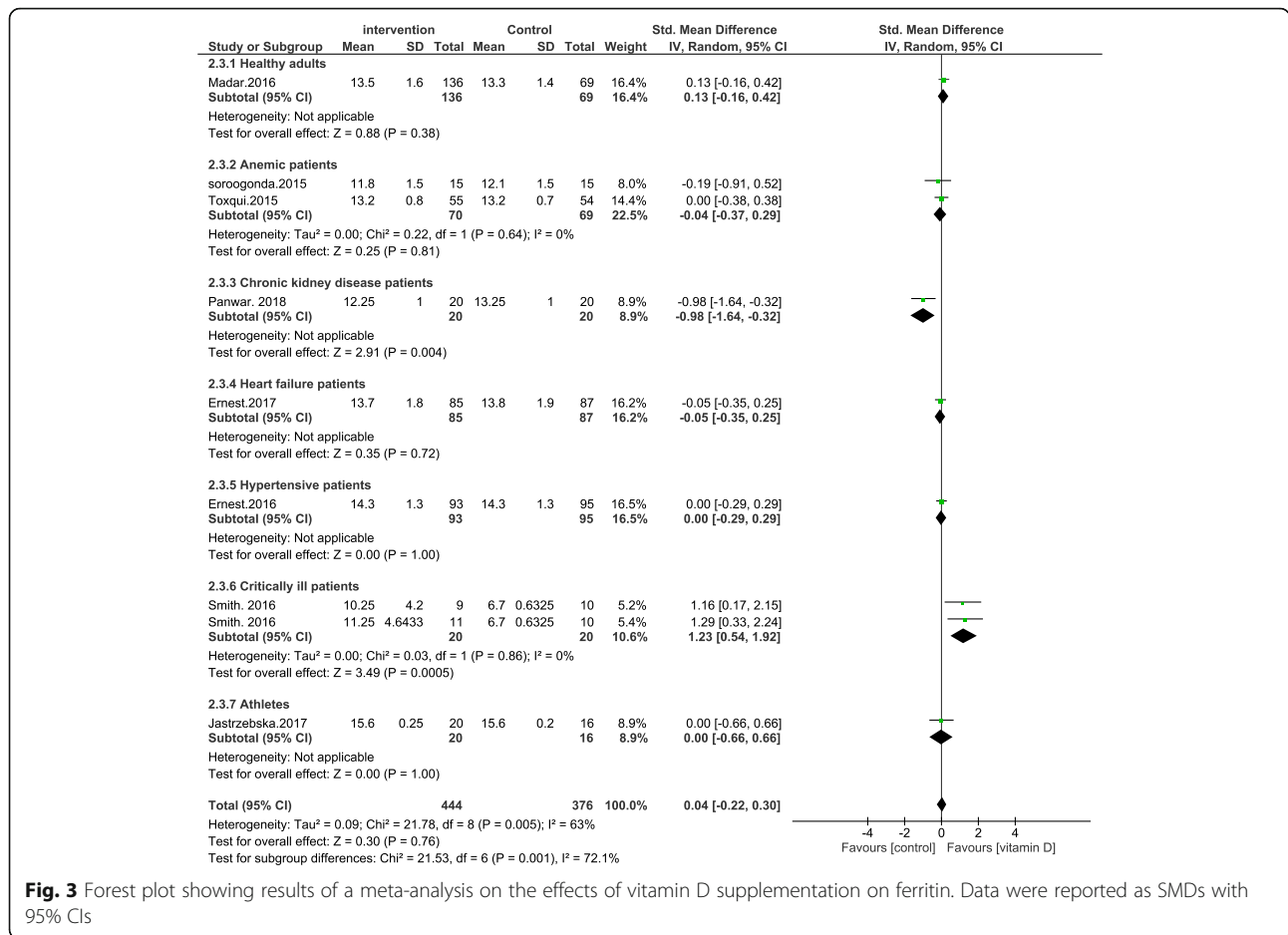


Fig. 3 Forest plot showing results of a meta-analysis on the effects of vitamin D supplementation on ferritin. Data were reported as SMDs with 95% CIs

Publisher’s Note

Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Ready to submit your research? Choose BMC and benefit from:

- fast, convenient online submission
- thorough peer review by experienced researchers in your field
- rapid publication on acceptance
- support for research data, including large and complex data types
- gold Open Access which fosters wider collaboration and increased citations
- maximum visibility for your research: over 100M website views per year

At BMC, research is always in progress.

Learn more biomedcentral.com/submissions



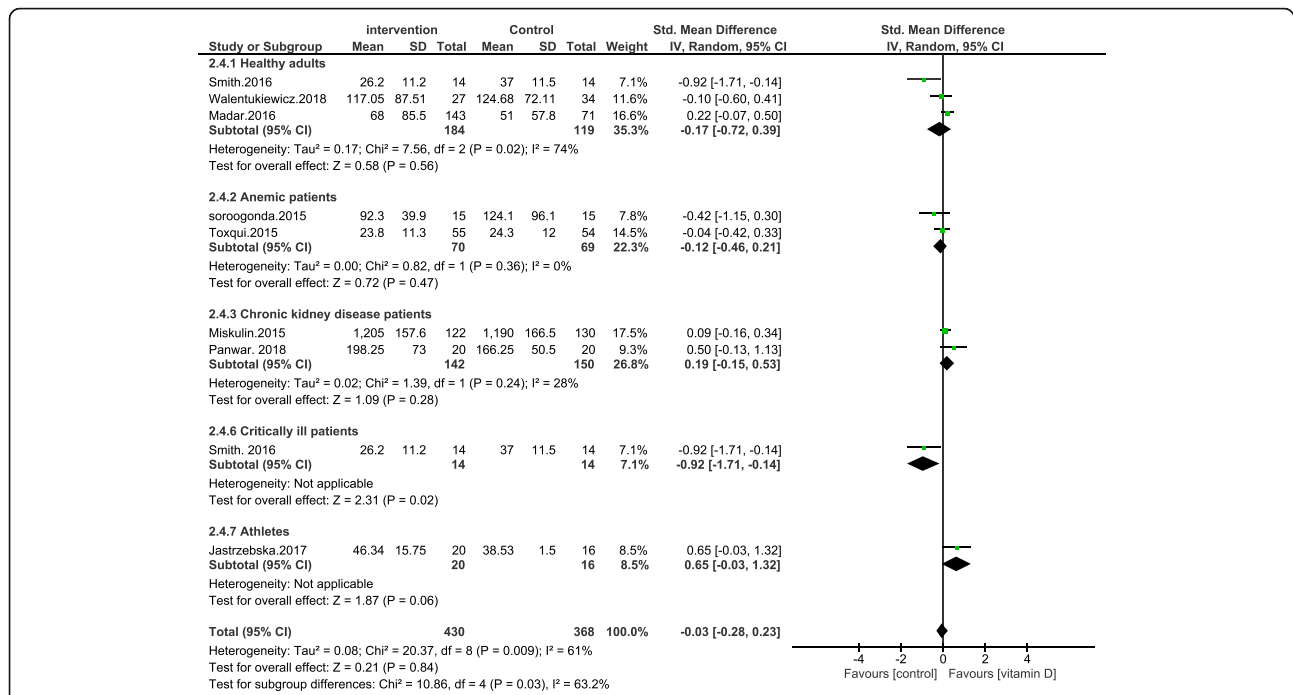


Fig. 4 Forest plot showing results of a meta-analysis on the effects of vitamin D supplementation on transferrin saturation. Data were reported as MDs with 95% CIs

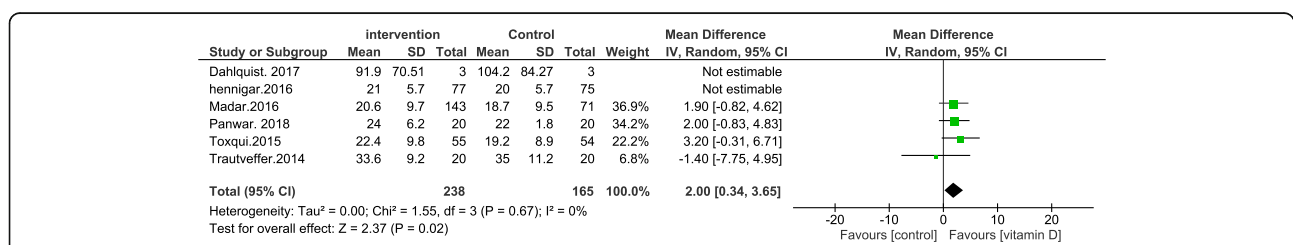


Fig. 5 Forest plot showing results of a meta-analysis on the effects of vitamin D supplementation on iron levels. Data were reported as SMDs with 95% CIs