

Correlation Between Serum Vitamin E and HOMA-IR in Patients with T2DM [Letter]

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Dear editor

We would like to congratulate the research group of Zhang et al for their recently published article entitled “Correlation between serum vitamin E and HOMA-IR in patients with T2DM”, which was found really interesting and informative by us.¹ The purpose stated in this article was to analyze the correlation of serum vitamin E levels and insulin resistance which affects the blood glucose levels. In terms of insulin resistance, a previous published review article reported that increased dietary vitamin C and vitamin E supplementation was positively associated with a lower risk.² A previously reported study discovered and reported that vitamin E consumption significantly lowered fasting blood glucose in trials with an intervention period of less than ten weeks and concluded that vitamin E consumption could improve HbA1c and insulin resistance in diabetics.³ From several studies mentioned, the importance of the work performed by Zhang et al could be understood and should be appreciated. They found that as the serum vitamin E levels decrease in T2DM patients, the risk of insulin resistance increases. In addition, they suggested that decreased serum level of vitamin E is a risk factor for insulin resistance when the serum levels are <10,575.23 ng/mL. However, there is an issue that could be discussed for a better approach which could be considered for future studies.

Observational studies have found that greater blood vitamin E concentrations, as well as increased vitamin E consumption and supplementation, are related with improved glycemic control in T2DM patients.⁴ In this study, the T2DM group had considerably reduced serum vitamin E levels compared with those in the non-T2DM (healthy) group. Notably, however, these serum levels were detected from the fasting condition. In addition, whether the recruited subjects (both T2DM and non-T2DM) consumed the high vitamin E-content food or any supplement before entering the fasting period was not clearly explained in the article. If we consider that all the subjects took the same food and supplement, if any, could the metabolism process be involved in determining the positive correlation of serum vitamin E level and risk of insulin resistance in T2DM patients? A previous study showed a significant inverse association between all vitamin E indices and metabolic syndrome.⁵ The idea could be whether a metabolic dysfunction occurring in T2DM patients which affects the metabolism of vitamin E intake eventually leads to the increased risk for insulin resistance. Overall, we appreciate the work performed by this research group in delivering global knowledge in the field.

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Disclosure

The authors report no conflicts of interest in this communication.

References

1. Zhang J, Hou Y, Zhang Z, Shi Y, Wang Z, Song G. Correlation between serum Vitamin E and HOMA-IR in patients with T2DM. *Diabetes Metab Syndr Obes.* 2024;17:1833–1843. doi:10.2147/DMSO.S450738
2. Lampousi AM, Lundberg T, Löfvenborg JE, Carlsson S. Vitamins C, E, and β -carotene and risk of type 2 diabetes: a systematic review and meta-analysis. *Adv Nutr.* 2024;15(5):100211. doi:10.1016/j.adnut.2024.100211
3. Asbaghi O, Nazarian B, Yousefi M, Anjom-Shoae J, Rasekhi H, Sadeghi O. Effect of vitamin E intake on glycemic control and insulin resistance in diabetic patients: an updated systematic review and meta-analysis of randomized controlled trials. *Nutr J.* 2023;22(1):1–22. doi:10.1186/s12937-023-00840-1
4. Xu R, Zhang S, Tao A, Chen G, Zhang M. Influence of vitamin e supplementation on glycaemic control: a meta-analysis of randomised controlled trials. *PLoS One.* 2014;9(4). doi:10.1371/journal.pone.0095008
5. Barzegar-Amini M, Khorramruz F, Ghazizadeh H, et al. Association between serum vitamin E concentrations and the presence of metabolic syndrome: a population-based cohort study. *Acta Biomed.* 2021;92(3). doi:10.23750/abm.v92i3.9173

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