

Commentary to “Can elite athletes benefit from dietary nitrate supplementation?”

AUTHORS: Simone Porcelli¹, Giuseppe Bellistri¹⁻², Gaspare Pavei³, Lorenzo Pugliese¹, Letizia Rasica¹, Mauro Marzorati¹

¹Institute of Molecular Bioimaging and Physiology, National Research Council, Segrate, Italy

²Department of Biomedical Sciences for Health, University of Milan, Milano, Italy

³Department of Pathophysiology and Transplantation, University of Milan, Milano, Italy

CORRESPONDING AUTHOR

Simone Porcelli

Institute of Molecular Bioimaging and Physiology

National Research Council

Via Fratelli Cervi 93, Segrate (MI)

20090 Italy

Ph:+390221717220

Email: simone.porcelli@ibfm.cnr.it

TO THE EDITOR: Jonvik and colleagues (1) have raised a really interesting and burning question about the ergogenic benefits of nitrate supplementation in elite athlete. In our previous experiments (2) we have seen that the effects of nitrate supplementation on oxygen consumption and running performance are significantly related to the individual aerobic fitness level, with no benefits observed on highly trained subjects ($\dot{V}O_{2\max} > 60 \text{ mL kg}^{-1} \text{ min}^{-1}$). Thus, our results seem to suggest that nitrate supplementation may be ineffective in elite athletes. However, “responders” are present among elite athletes (3-5) and the potential effects of nitrate supplementation on these subjects are unclear and need further examination. As indicated by a significant negative correlation between the increase of plasma nitrite after supplementation and performance in our results, the magnitude of the variance in nitrate/nitrite concentration after supplementation may be a crucial point. In accordance, a greater increase in nitrite levels following supplementation has been observed in “responders” (5). Thus, in our opinion more attention should be paid to the effects of nitrate supplementation on nitrate/nitrite levels than on the aerobic fitness of the subject itself, even though these two aspects are related. Future studies need to investigate in elite athletes the “dose-response” relationship between nitrate supplementation and the amount of change in blood concentration of nitrate/nitrite, in order to clarify if elite athletes may request a higher dose of nitrate or a longer supplementation period to improve their performance.

References

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