

Letter to the Editor

Comment #2 on “Differences in Ventilatory Threshold for Exercise Prescription in Outpatient Diabetic and Sarcopenic Obese Subjects”

Goran Kuvačić ¹, Luca Paolo Ardigo ², and Johnny Padulo ^{1,3,4}

¹Faculty of Kinesiology, University of Split, Split, Croatia

²School of Exercise and Sport Science, Department of Neurosciences, Biomedicine and Movement Sciences, University of Verona, Verona, Italy

³University eCampus, Novedrate, Italy

⁴Research Laboratory “Sport Performance Optimization”, National Center of Medicine and Sciences in Sport (CNMSS), Tunis, Tunisia

Correspondence should be addressed to Goran Kuvačić; gorkuv@kifst.hr

Received 8 December 2017; Accepted 13 September 2018; Published 28 November 2018

Academic Editor: Dario Acuña-Castroviejo

Copyright © 2018 Goran Kuvačić et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

This journal published an original article entitled “Differences in Ventilatory Threshold for Exercise Prescription in Outpatient Diabetic and Sarcopenic Obese Subjects” [1]. Following a first letter regarding that article [2] and a response by its authors [3], some points still remain unclear. The aim of this second letter is to point out the unaddressed points and stimulate some thoughts.

We were waiting for an exhaustive response to our letter [2]. Yet, their response did not satisfy us completely. Therefore, we point out again only some issues previously raised but still not properly addressed [1, 3].

In 2.3. *Maximal Effort and Individual Ventilatory Threshold*, the authors support the use of the chosen treadmill incremental protocol by means of a self-citation, which might be proper if only the provided self-citation would really describe the protocol. Yet, this is not the case, because the self-citation refers only to an undescribed *modified Balke protocol*. Therefore, the authors should describe the chosen treadmill incremental protocol and provide the original reference of the Balke protocol (the one used in the self-citation, “[27] B. Balke and R. W. Ware, “An experimental study of physical fitness of Air Force personnel” United States Armed Forces Medical Journal, vol. 10, no. 6, pp. 675–688, 1959,” would

fit well). Furthermore, the authors did not provide any information on the correct treadmill use for scientific research (e.g., on speed calibration or slope setting [4]).

In 2.3. *Maximal Effort and Individual Ventilatory Threshold*, we refer to the fact that the maximal effort and individual ventilatory threshold were assessed by a maximal graded exercise test on a treadmill according to individual abilities as previously done in another authors’ study [5].

- (1) Supported by a bulk of literature [6], we absolutely disagree with the use of the Balke protocol (or any modified Balke protocol) for outpatient diabetic and sarcopenic obese subjects. And especially for pathological subjects, it is particularly important to achieve true $\dot{V}O_{2\text{peak}}$ (which was the specific study’s condition) [7]. Traditionally, in such subjects, $\dot{V}O_{2\text{peak}}$ is achieved by administering traditional graded protocols, but the suggested protocol in pathological subjects is—in by far most instances—the Naughton one [8], not the Balke protocol, even if there is a growing body of literature supporting the use of individualized (continuous) ramp protocols in pathological subjects [6], i.e., protocols completely different

from the traditional graded ones, like the Balke protocol

- (2) There is no information about the chosen methodology test-retest precision of the measure [9]
- (3) About the treadmill use, the authors did not address our request to provide the device's brand and model (as commonly done in scientific literature). Neither did the authors provide any information about speed calibration or slope setting [4, 10]

In conclusion, we think that the attention of sport scientists should focus more on methodological issues. Sport scientists should aim as much as possible at both accuracy/precision of the measure and reduced exposure to errors. Acceptable accuracy and precision are essential requirements to perform sound research. Therefore, sport scientists should carefully choose among the available methods the most effective ones to pursue high accuracy/precision standards.

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this manuscript.

References

- [1] G. P. Emerenziani, M. C. Gallotta, S. Migliaccio et al., "Differences in ventilatory threshold for exercise prescription in outpatient diabetic and sarcopenic obese subjects," *International Journal of Endocrinology*, vol. 2016, Article ID 6739150, 6 pages, 2016.
- [2] G. Kuvačić and J. Padulo, "Comment on "Differences in ventilatory threshold for exercise prescription in outpatient diabetic and sarcopenic obese subjects"," *International Journal of Endocrinology*, vol. 2017, Article ID 1754215, 2 pages, 2017.
- [3] G. P. Emerenziani, M. C. Gallotta, S. Migliaccio et al., "Response to: Comment on "Differences in ventilatory threshold for exercise prescription in outpatient diabetic and sarcopenic obese subjects"," *International Journal of Endocrinology*, vol. 2017, Article ID 7026597, 2 pages, 2017.
- [4] J. Padulo, K. Chamari, and L. P. Ardigò, "Walking and running on treadmill: the standard criteria for kinematics studies," *Muscles, Ligaments and Tendons Journal*, vol. 4, no. 2, pp. 159–162, 2014.
- [5] G. P. Emerenziani, M. C. Gallotta, M. Meucci et al., "Effects of aerobic exercise based upon heart rate at aerobic threshold in obese elderly subjects with type 2 diabetes," *International Journal of Endocrinology*, vol. 2015, Article ID 695297, 7 pages, 2015.
- [6] S. C. da Silva, W. D. Monteiro, F. A. Cunha, J. Myers, and P. T. V. Farinatti, "Determination of best criteria to determine final and initial speeds within ramp exercise testing protocols," *Pulmonary Medicine*, vol. 2012, Article ID 542402, 10 pages, 2012.
- [7] R. E. Wood, A. P. Hills, G. R. Hunter, N. A. King, and N. M. Byrne, " $\dot{V}O_{2\max}$ in overweight and obese adults: do they meet the threshold criteria?," *Medicine & Science in Sports & Exercise*, vol. 42, no. 3, pp. 470–477, 2010.
- [8] W. D. McArdle, F. I. Katch, and V. L. Katch, *Exercise Physiology: Nutrition, Energy, and Human Performance*, Lippincott Williams & Wilkins, 2010.
- [9] W. G. Hopkins, "Measures of reliability in sports medicine and science," *Sports Medicine*, vol. 30, no. 1, pp. 1–15, 2000.
- [10] E. M. Winter, "Calibration and verification of instruments," *Journal of Sports Sciences*, vol. 30, no. 12, pp. 1197–1198, 2012.