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Letter to the Editor

Regarding: “Inspiratory muscle training improves performance of a repeated sprints ability test in professional soccer players”



A B S T R A C T

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The Journal of Bodywork & Movement Therapies recently published an article by Silva et al., entitled “Inspiratory muscle training improves performance of a repeated sprints ability test in professional soccer players” (Silva et al., 2019). After close reading we find that the new findings of Silva et al., (2019) are relevant and provide a promising indication that IMT can improve the performance of young male soccer players. However, some additional important points must be considered when interpreting these positive findings.

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Dear Editor,

The recent study by Silva et al. published by The Journal of Bodywork & Movement Therapies in 2019 and entitled “Inspiratory muscle training improves performance of a repeated sprints ability test in professional soccer players” raises two important issues regarding a short inspiratory muscle training (IMT) protocol in young professional soccer players (Silva et al., 2019). The authors showed that a protocol of IMT was effective to improve inspiratory muscle strength and inspiratory muscle efficiency, which led to a decrease in sprint time and to an increase in exercise tolerance. These positive findings, mainly the first, are largely compatible with the established literature that demonstrated the increase in respiratory muscle strength following IMT (HajGhanbari et al., 2013; Illi et al., 2012; Shei, 2018; Karsten et al., 2018) and improvements in the professional soccer players’ performance (Archiza et al., 2018). However, some important points must be considered when we interpret these findings.

First, a two-week IMT protocol, with 15 and 30 self-paced inspiratory breaths once a day (each to 50% maximal static inspiratory pressure [P₀]), in the 1-and 2-week intervention period, respectively, performed prior to soccer training (1 set.d-1; 6 d.wk-1), may represent a short and less aggressive intervention. A recent systematic review with meta-analysis (Karsten et al., 2018) showed that IMT protocols with higher resistance, load/pressure, and frequency generate the best results in inspiratory pressure/strength and sports performance of athletes.

Secondly, the absence of a control group in the study may compromise the conclusions. It is necessary to realize that the decrease in sprint time and the improvement in exercise tolerance, peak inspiratory flow, and maximal inspiratory pressure may be due to the learning effect (i.e. adaptation to the repeated sprint ability and to the inspiratory muscle assessment tests) and not due to the IMT only. In the paper, the authors did not specify if the professional soccer players were used to performing the repeated sprint

ability test and the inspiratory muscle assessment. Therefore, we agree with the authors about the need for a more adequate sample and the use of a control group in future research.

Finally, we believe that the difference in performance and respiratory variables of young professional soccer players pre- and post-IMT has statistical significance, but may not have clinical significance (McClay 1997). The 5.2% drop in total time sprint probably cannot be noticed by athletes and the important minimum difference of the repeated sprint skill test is unknown for young professional soccer players. Thus, a control group should be used to compare with the observed results. In addition, a perceived effort scale should also have been used to evaluate the IMT results subjectively.

In summary, the novel findings by Silva et al., (2019) are relevant and provide a promising indication that IMT can improve the performance of young male soccer players and can be useful in the training of thousands of soccer players around the world. Nevertheless, future studies should answer previously elaborated questions about what to do to maximize the effectiveness of IMT in athletes (Shei and Mickleborough, 2019; Karsten et al., 2019), such as “what is the best duration, overload, daily frequency of IMT?” and “when is the best time to apply the IMT? Before, after or simultaneously to training for actual sports situations?”.

Ethical approval

Not applicable.

Conflict of interest

None disclosed.

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