



LETTER TO THE EDITOR

Comment on: “Effect of High-Intensity Interval Training on Total, Abdominal and Visceral Fat Mass: A Meta-Analysis”

Ming Li¹ · Hai Chen¹ · Chan Chen¹ · Tao Zhu¹

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Dear Editor,

We read with great interest the recent meta-analysis written by Maillard et al. [1] that investigated the effect of high-intensity interval training (HIIT) on total, abdominal and visceral fat mass. The authors concluded that HIIT was a time-efficient strategy to decrease fat-mass deposits, including those of abdominal and visceral fat mass. Furthermore, the authors found that HIIT running may be more effective than HIIT cycling. We appreciate the authors' thorough analysis, however some important limitations of the findings of this review should be noted.

First, the authors limited their search to the PubMed and Google Scholar electronic databases. Unfortunately, other large databases such as Web of Science and the Cochrane Library interface for searching CENTRAL (Cochrane Central Register of Controlled Trials) were not explored. Additionally, the information regarding the search strategy was poorly depicted. A combination of only three search terms was used, and the search strategy may have resulted in the potential for selection bias and may have influenced the generalizability of the study findings. Thus, for an elaborate search of the literature, an optimal search strategy is necessary.

Second, it is critical to assess the quality of each included trial because this is directly linked to the

reliability of the results. In addition, reporting methodological quality helps clinicians determine whether and how the results of clinical trials will affect their clinical practice [2]. As has been reported in a large number of publications, study quality assessment is an essential step in a meta-analysis [3, 4]; however, in this review important detailed information about quality assessment was not provided. Accordingly, it is difficult for readers to determine the reliability of the study findings.

Third, to achieve the targeted intensity level, HIIT requires a high degree of motivation; therefore, a significant concern is the safety of HIIT for patients. Although the HIIT modality may be a tolerated and time-efficient strategy for improving patient health, adverse events during training (e.g. fall, ankle sprain, or angina) cannot be ignored. Both safety and efficacy need to be considered to guide clinical judgment and treatment. Maillard et al. [1] should have therefore taken the adverse events of HIIT into account and made it one of the indicators of outcome measures in their review.

In conclusion, Maillard et al. [1] analyzed an important issue regarding the effect of HIIT on total, abdominal and visceral fat mass; however, the results of this meta-analysis should be interpreted with caution due to the limitations mentioned above. We believe that our remarks will contribute to a more accurate elaboration of the results presented by Maillard et al. [1].

✉ Chan Chen
xychenchan@gmail.com

¹ Department of Anesthesiology and Translational Neuroscience Center, West China Hospital, Sichuan University, Chengdu 610041, Sichuan, China

Compliance with Ethical Standards

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Conflict of interest Ming Li, Hai Chen, Chan Chen and Tao Zhu declare that they have no conflicts of interest relevant to the content of this letter.

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