

PEER-REVIEW REPORT

Name of journal: *World Journal of Diabetes*

Manuscript NO: 85200

Title: Association between cardiorespiratory fitness level and insulin resistance in adolescents with various obesity categories

Provenance and peer review: Invited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 04419139

Position: Peer Reviewer

Academic degree: MD, PhD

Professional title: Assistant Professor, Senior Scientist

Reviewer's Country/Territory: United States

Author's Country/Territory: Croatia

Manuscript submission date: 2023-04-17

Reviewer chosen by: Geng-Long Liu

Reviewer accepted review: 2023-05-05 17:34

Reviewer performed review: 2023-05-05 19:55

Review time: 2 Hours

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Very good <input type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Novelty of this manuscript	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No novelty
Creativity or innovation of this manuscript	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Good <input checked="" type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No creativity or innovation

Scientific significance of the conclusion in this manuscript	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No scientific significance
Language quality	<input type="checkbox"/> Grade A: Priority publishing <input checked="" type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
Conclusion	<input type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input checked="" type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Re-review	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Peer-reviewer statements	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous
	Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

Overall, this paper provides a detailed investigation of the relationship between cardiorespiratory fitness (CRF) and insulin resistance in obese adolescents. The research methods and data analysis demonstrate a degree of scientific rigor and validity. Furthermore, the paper offers valuable insights, emphasizing the importance of CRF in obese adolescents and advocating for lifestyle interventions to improve CRF. However, there is room for improvement in certain aspects of the paper. For instance, further discussion and comparison of similarities and differences between related studies could be included, as well as elaboration on specific interventions to improve CRF in adolescents with varying degrees of obesity and a comparison of different methods of assessing insulin resistance. Additionally, it is recommended that the language be polished to enhance clarity and accuracy of expression. In conclusion, with appropriate revisions and improvements, this paper has significant academic value and potential for publication.

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Manuscript NO: 85200

Title: Association between cardiorespiratory fitness level and insulin resistance in adolescents with various obesity categories

Provenance and peer review: Invited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 03912151

Position: Peer Reviewer

Academic degree: MD, PhD

Professional title: Doctor, Professor, Research Scientist, Teacher

Reviewer's Country/Territory: China

Author's Country/Territory: Croatia

Manuscript submission date: 2023-04-17

Reviewer chosen by: Geng-Long Liu

Reviewer accepted review: 2023-05-04 02:04

Reviewer performed review: 2023-05-12 08:29

Review time: 8 Days and 6 Hours

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input checked="" type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Novelty of this manuscript	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No novelty
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Scientific significance of the conclusion in this manuscript	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No scientific significance
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Conclusion	<input type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input checked="" type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Re-review	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Peer-reviewer statements	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous
	Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

This study explored the relationship between cardiopulmonary fitness and insulin resistance in adolescents with different obesity types. The study found that poor CRF was associated with higher HOMA-IR, and the improvement of CRF in adolescents with severe obesity helped to reduce insulin resistance. The novelty is that the relationship between CRF and insulin resistance in adolescents with different obesity categories has been studied, providing evidence to support the treatment of cardiopulmonary function improvement in adolescents with obesity. However, there are some potential problems and room for improvement in some aspects of the paper. 1. In the METHOD section, the authors mentioned "according to the terciles of CRF into groups with poor, intermediate or good CRF," but no specific classification criteria exist. There is also a lack of corresponding discussion in the DISCUSSION section, such as how to explain the differences in the CRF intermediate group in Figure 3. 2. There is a sex difference in adolescent obesity, as mentioned in the DISCUSSION section, "The proportion of participants with severe obesity was higher in adolescent boys than in adolescent girls, which is in line with literature data." In the description of gender in the first part of the



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results, the author mentioned "with no statistically significant difference between the sexes"; however, in Table 1, it is shown that in different obesity categories, the gender difference is statistically significant. Secondly, according to Figure 1, it can be seen that female participants are significantly more than males. How should the author explain this difference and eliminate the influence in the study? 3. The aim of this research is "To investigate the association between CRF and insulin resistance in obese adolescents, with special emphasis on severely obese adolescents." However, this study focuses on obese adolescents. Whether it is necessary to set up normal controls is expected to be further explained by the author. 4. The authors classified class II and III obesity as severe obesity, and in a subsequent Two-way ANOVA, only mildly obese and severely obese were analyzed. Why not choose the obesity category (class I/II/III) for analysis? 5. It is suggested that relevant results of Two-way ANOVA (Two-way ANOVA with Bonferroni correction) should be presented in tabular form. In conclusion, with appropriate modifications, this study has specific academic value and publication significance.