

REVIEWER'S REPORT

Manuscript No.: IJAR-53313

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Title: BREATH- HOLDING DRILLS ON OXYGEN UTILIZATION AND FATIGUE RESISTANCE AMONG SWIMMING ATHLETES

Recommendation:

Accept as it isYES.....

Accept after minor revision.....

Accept after major revision

Do not accept (*Reasons below*)

Rating	Excel.	Good	Fair	Poor
Originality			✓	
Techn. Quality			✓	
Clarity			✓	
Significance		✓		

Reviewer Name: Mir Jaffar

Reviewer's Comment for Publication.

Abstract Review:

The abstract provides a clear and comprehensive overview of the research focus, emphasizing the importance of cardiovascular endurance, muscular strength, and efficient oxygen use in swimming. It highlights breath-holding drills (voluntary apnea) as an emerging training method that induces physiological adaptations beneficial to athletes. Key points include evidence from meta-analyses showing improved anaerobic performance, the role of controlled-frequency breathing (CFB) in enhancing muscular oxygen utilization and respiratory muscle strength, and findings from studies on inspiratory muscle resistance training in artistic swimmers. The discussion of the mammalian diving reflex adds depth by connecting natural physiological mechanisms to performance outcomes. The abstract also acknowledges potential risks of breath-holding drills, such as blackouts from hyperventilation, ensuring a balanced presentation. References to systematic reviews and emerging Southeast Asian research further contextualize the study, highlighting regional contributions to the topic. Overall, the abstract integrates background, evidence, risks, and benefits into a cohesive summary.

Introduction Review:

The introduction establishes the relevance of breath-holding drills in elite swimming training,

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presenting them as a strategy to enhance oxygen utilization, delay fatigue, and improve endurance. It notes the physiological basis of these drills, particularly their ability to increase tolerance to hypoxic conditions and improve respiratory efficiency. The section cites recent studies to underscore scientific interest in this training approach, pointing to improvements in oxygen uptake and delayed muscle fatigue as promising outcomes. The introduction positions breath-holding exercises as complementary to traditional endurance training, framing them as a potential competitive advantage for athletes seeking performance optimization. The argument is presented logically, moving from general training principles to the specific role of breath-holding in swimming.

Overall Assessment:

The abstract and introduction collectively provide a strong foundation for the study. The abstract synthesizes existing findings, balancing physiological benefits with potential risks, while situating the research within both global and regional contexts. The introduction effectively contextualizes the topic within competitive swimming, framing breath-holding drills as an innovative and scientifically supported training method. Together, they demonstrate coherence, academic grounding, and relevance for sports science and athlete performance enhancement.