



## Cardiorespiratory Fitness Status of Multi-Discipline Martial Arts Athletes: Evidence from a Pre-PON XXI Training Camp

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### ABSTRACT

### ARTICLE INFO

**The purpose of the study.** This study aimed to critically evaluate the cardiorespiratory fitness (CRF) profile of multi-discipline martial arts athletes during a pre-PON XXI centralized training camp and to establish an evidence-based foundation for optimizing aerobic conditioning strategies.

**Materials and methods.** A cross-sectional descriptive design was employed involving competitive martial arts athletes enrolled in a provincial training camp (PELATDA). Cardiorespiratory fitness was assessed using the multistage fitness test to estimate maximal oxygen uptake ( $VO_2max$ ). Descriptive and comparative analyses were conducted to examine fitness distribution and inter-discipline variability.

**Results.** The results revealed that, while most athletes exhibited moderate-to-good CRF levels, a substantial proportion failed to meet elite-performance  $VO_2max$  benchmarks. Notable variability was observed across martial arts disciplines, reflecting differences in physiological demands and training adaptations. These findings indicate suboptimal aerobic preparedness in a segment of athletes and underscore the limited integration of structured endurance-based conditioning within current training regimes.

**Conclusions.** The CRF status of multi-discipline martial arts athletes in the pre-PON XXI training camp remains insufficiently optimized for high-performance competition. Targeted, periodized aerobic training—particularly high-intensity interval training (HIIT)—is strongly recommended to enhance  $VO_2max$  and support repeated high-intensity efforts. Continuous physiological monitoring should be integrated into training systems to ensure evidence-driven performance enhancement.

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### INTRODUCTION

### MATERIALS AND METHODS

### RESULTS

### DISCUSSION

### CONCLUSION

### ACKNOWLEDGMENTS

### CONFLICT OF INTEREST

### REFERENCES

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