

Cardiac Stress Associated with High-Intensity Fire Fighting

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Abstract
Objective: The purpose of this study was to determine the relationship between heart rate (HR) and oxygen consumption (VO₂) during high-intensity fire fighting. Methods: A total of 42 firefighters (N = 42) participated in a 10-minute fire fighting task. HR and VO₂ were measured during the task. Results: HR increased significantly during the task (170 ± 14 vs. 155 ± 11 beats/min; p < 0.05). VO₂ also increased significantly (1978 ± 366 vs. 1502 ± 190 ml/min; p < 0.05). The relationship between HR and VO₂ was positive (r = 0.856; p < 0.05). Conclusion: High-intensity fire fighting is associated with increased HR and VO₂. The relationship between HR and VO₂ is positive, suggesting that HR is a good indicator of metabolic demand during fire fighting.

Keywords