Taekwondo exercise protocols do not recreate the physiological responses of championship combat.

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Abstract

The aim of this study was to determine the external validity of Taekwondo-specific exercise protocols. 10 male international Taekwondo competitors (age 18±2 years) took part in a championship combat and an exercise protocol that simulated the activity pattern of
Taekwondo combat. Heart rate and venous blood samples were obtained in both settings. Despite similarity in the activity profiles, the championship Taekwondo combats elicited higher (p<0.05) heart rate (188±8 beats.min$^{-1}$), plasma lactate (12.2±4.6 mmol.L$^{-1}$), glucose (10.3±1.1 mmol.L$^{-1}$), glycerol (143.4±49.4 µmol.L$^{-1}$), adrenaline (2.7±1.7 nmol.L$^{-1}$) and noradrenaline (14.3±9.4 nmol.L$^{-1}$) responses than the Taekwondo exercise protocol (heart rate: 172±4 beats.min$^{-1}$; plasma lactate: 3.6±2.7 mmol.L$^{-1}$; glucose: 5.9±0.8 mmol.L$^{-1}$; glycerol: 77.7±21.3 µmol.L$^{-1}$; adrenaline: 0.6±0.2 nmol.L$^{-1}$ and noradrenaline: 3.0±1.1 nmol.L$^{-1}$). This discrepancy in the physiological responses appeared to be mediated by a reduced stress response in the Taekwondo exercise protocol. These findings suggest that Taekwondo-specific exercise protocols are not appropriate to study the physiological demands of Taekwondo. Strategies designed to increase the stress response in this setting may be necessary to improve the external validity of this experimental framework.

**Key words**

- physiology - hormones - catecholamines - stress - simulation - activity profile
threat.
A Review of the Online Version of Participation Motivations of Taekwondo Athletes/Students, shrinkage is a deep kinetic moment.