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Abstract

Psychological correlates of challenge and threat states in a sport setting

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In sport, athletes can broadly respond to a competitive situation in two ways, as a challenge or as a threat. Challenge and threat states are thought to have distinct cardiovascular patterns, which are indicative of underlying neuroendocrine changes in norepinephrine, epinephrine, and cortisol. The challenge pattern is characterised by increases in cardiac responses (heart rate, cardiac output, ventricular contractility) and a decrease in total peripheral resistance (TPR; widening of the blood vessels). The threat pattern is characterised by increases in cardiac responses and no change or an increase in TPR (e.g. constriction of the blood vessels). In this study, the correlates of challenge and threat states in sport are examined, namely emotional responses, self-efficacy, and the use of psychological strategies in sport. Cardiovascular responses (heart rate, cardiac output, preejection period, and total peripheral resistance) of 64 collegiate athletes will be collected using impedance cardiography during a control condition (friend speech) and an experimental condition (important sport situation speech). Participants displaying a cardiovascular pattern characterising a challenge state are compared with participants displaying a cardiovascular pattern characterising a threat state. It is hypothesized that pleasant emotions and high levels of self-efficacy are associated with a challenge state and unpleasant emotions and low levels of self-efficacy with a threat state. Preliminary findings will be discussed in relation to future research directions in both sport and biopsychology and implications for applied practice.