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A Pilot Study: High Intensity Intermittent Training to combat chronic stress in the New Zealand Police.

A master's thesis presented in partial fulfilment of the requirements for the degree of Masters of Sport and Exercise.

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Abstract

**Background:** Stress is increasingly being reported to be associated with
immunosuppression, disease progression and psychological illness (Sergerstrom &
Miller, 2004). Police are considered to be employed in a highly stressful occupation
and due to this are at a heightened risk for developing negative chronic stress
related disorders (de Terte & Stephens, 2014). There are known strategies to
combat stress such as exercise. However, in moderately active individuals a more
vigorous exercise programme is needed to reduce the effects of stress. High
intensity intermittent training (HIIT) could be a potential stress reducing
mechanism especially due to its success in treating obesity, weight loss and cardiac
issues (Gibala, Little, MacDonald, & Hawley, 2012; Schoenfeld & Dawes, 2009).

**Aim:** To see the effects of HIIT on chronic stress indices in the New Zealand Police.

**Method:** Using three single case studies, this study employed a 10-week HIIT
intervention measuring markers of stress such as Perceived Stress Scale scores,
cortisol levels and associated blood immune markers at baseline and post-
intervention.

**Results:** Chronically stressed police officers displayed high perceived stress scale
scores and compromised immune functioning due to decreased cortisol secretion
and increased eosinophil count. Post-intervention decreased perceived stress,
normalised cortisol levels and reduced immune inflammation markers.

**Conclusion:** High Intensity intermittent training decreases perceived chronic
stress while also providing further evidence for the relationship between systemic
inflammation and mental disease.
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Approval for this study was via the Massey University Ethics Committee for the experiments carried out and described in this thesis.
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