

Stress and the psyche: methodological innovations in psychoneuroimmunology

Results:

There is an inconsistency within the literature concerning whether acute stress leads to an increase or decrease in mucosal immunity. We examined this inconsistency using parachute jumping as an ecologically valid method of inducing acute stress coupled with psychological and physiological measures of stress on the day of the jump and seven days before and after it. Twenty-eight novice tandem jumpers participated in this study along with thirty one non-parachute controls. The parachutists completed a daily questionnaire assessing levels of stress and provided a 2-minute unstimulated saliva sample on each of the seven days before the parachute jump, the day of the jump and the seven days after the jump. A sub-group of 12 parachutists provided saliva samples before and after the parachute jump. Saliva samples were analysed for cortisol, a measure of physiological stress, and immunoglobulin A (IgA), a measure of mucosal immunity. There were significant and substantial increases in IgA and cortisol following the jump indicating that the parachutists found the experience stressful and that this led to an increase in mucosal immunity. These increases seem transient as there was no indication of any physiological or psychological change in the evening measures on the day of the jump or the days that followed. In conclusion, using an ecologically valid acute stressor we found evidence of a substantial but transient increase in mucosal immunity with no evidence of suppression. Acute stressful situations appear to provide a brief enhancement of the mucosal immune system with no evidence of any detrimental effects.

Published work:

M. Bristow, R. Cook, S. Veerapen & M. Edwards (Under review) Measurement bias in the assessment of mucosal immunity: Implications for stress research. *Anxiety, Stress and Coping*.

M. Bristow, R. Cook, & M. Edwards (In Prep) Perceived stress and mucosal immune reactivity

Researchers' Contacts:

Dr. Matt Bristow
Stress and Health Research Group
Department of Psychology
Anglia Ruskin University, Cambridge.
CB1 1PT
01223 363271
Email: m.bristow@anglia.ac.uk