

# Heart rate variability and cortisol responses during attentional and working memory tasks in naval cadets

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Bjørn Helge Johnsen, Anita L. Hansen, Robert Murison, Jarle Eid, Julian F. Thayer

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### Abstract

The aim of the paper was to study the relationship between heart rate variability (HRV) and cortisol release during cognitive challenging tasks. Forty-nine male naval cadets from the Royal Norwegian Naval Academy were administered computerised versions of attentional and working memory tests. The results from this study support the hypothesis of a negative correlation between HRV and cortisol secretion during cognitive tasks. Confirmation of the hypothesis with the low HRV group scoring higher o... [MORE](#)

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### Keywords

heart rate variability; cortisol; cognitive tasks

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Authors

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Bjørn Helge Johnsen  
Anita L. Hansen  
Robert Murison  
Jarle Eid  
Julian F. Thayer

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By "Via Medica sp. z o.o." sp.k., ul. Świętokrzyska 73, 80-180 Gdańsk

tel.: +48 58 320 94 94, faks: +48 58 320 94 60, e-mail: [viamedica@viamedica.pl](mailto:viamedica@viamedica.pl)

Heart rate variability (HRV) means fluctuations in heart rate around its mean value or the differences in times between successive heart beats. Heart rate and heart rate variability recordings have been used as indicators of the function of ANS (Task Force 1996). HRV analysis has been proposed as a non-invasive technique for the evaluation of job-related cardiovascular stressors (Kristal-Boneh et al. 1995) and it provides an excellent tool for ambulatory measurement of work stress. This study was a part of a currently ongoing larger research project "Heart Rate and Work Stress" in the University of Jyväskylä. The aim of the project is to validate the new method for detecting work-related stress and to provide models and advice for the use of the method in occupational health care settings.