

## **Forschungsgesuch Heinrichs**

### **Protektive Effekte von Breiten- versus Spitzensport auf die psychische und physiologische Stressreaktivität: Ein psychobiologischer Ansatz**

#### **Summary**

Physical activity has proven benefits for physical and psychological well-being and is associated with reduced responsiveness to physical stress. However, it is not clear to what extent physical activity also modulates the responsiveness to psychosocial stress. A better understanding of the preventive role of sports in stress responsiveness would have direct clinical implications of major public health significance. The present study examined whether different levels of physical activity modulate adrenal, autonomic, and psychological responses to acute psychosocial stress. Twenty-two trained men (elite sportsmen) and 22 healthy untrained men were exposed to a standardized psychosocial laboratory stressor (Trier Social Stress Test). Salivary free cortisol levels, heart rate, anxiety, mood, and calmness were repeatedly measured before and after stress exposure. In response to stress, cortisol levels and heart rate were significantly increased in all subjects. However, trained men exhibited significantly lower cortisol and heart rate responses to stress compared with untrained men. In addition, trained men showed significantly higher calmness and better mood, and a trend toward lower state anxiety during the stress protocol. Taken together, elite sportsmen showed reduced reactivity to psychosocial stress, characterized by lower adrenal, autonomic, and psychological stress responses. These results may provide further evidence for a protective effect of physical activity against stress-related disorders.