

Publication

Association between cardiorespiratory fitness and social cognition in healthy adults

JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)**ID** 4598796**Author(s)** Ludyga, Sebastian; Schilling, René; Colledge, Flora; Brand, Serge; Pühse, Uwe; Gerber, Markus**Author(s) at UniBasel** [Ludyga, Sebastian](#) ; [Schilling, René](#) ; [Colledge, Flora](#) ; [Pühse, Uwe](#) ; [Gerber, Markus](#) ; [Brand, Serge](#) ;**Year** 2020**Title** Association between cardiorespiratory fitness and social cognition in healthy adults**Journal** Scandinavian Journal of Medicine and Science in Sports**Volume** 30**Number** 9**Pages / Article-Number** 1722-1728**Keywords** aerobic exercise; cognitive performance; emotion recognition; physical activity**Mesh terms** Adult; Cardiorespiratory Fitness; Cross-Sectional Studies; Emotions; Facial Recognition; Female; Healthy Volunteers; Humans; Male; Police; Sex Factors; Social Cognition; Task Performance and Analysis

Whereas there is compelling evidence for an association between cardiorespiratory fitness (CRF) and executive function and attention, its relation with social cognition has not been investigated yet. However, social cognition is linked with mental health and career success in jobs with high demands on social interaction. The present study aims to examine the association between CRF and the facial emotion recognition aspect of social cognition in police officers. The study utilized a crosssectional design. 198 male and female participants (aged 38.3 \pm 1.3 years) completed the Åstrand submaximal bicycle ergometer test and their CRF was estimated using the ÅstrandRhyning nomogram. Additionally, a 2choice reaction time task and two facial emotion recognition tasks (labeling and matching) with low (emotion recognition from faces) and high (emotion recognition from eyes) difficulty trials were administered for the assessment of attention and social cognition. Adjusting for age, gender, education, and attention, hierarchical regression supported higher CRF to be related to higher performance on overall performance on the facial emotion labeling and matching tasks, Beta = 0.141, P = .046. With regard to difficulty levels, a similar association between CRF and task performance was found for the faces condition, Beta = 0.147, P = .043, but not for the eyes condition, Beta = 0.105, P = .132. Social cognition appears to differ as a function of adults' CRF level. The present findings have a high relevance for police officers, because they need to rely on this cognitive domain for many decisions in their worklife.

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