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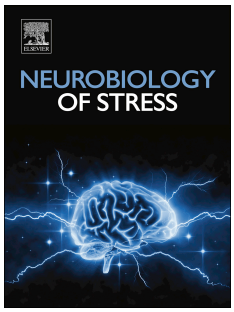

Exercise, the diurnal cycle of cortisol and cognitive impairment in older adults

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Abstract: Exercise has been shown to reduce the risk of developing Mild Cognitive Impairment and Alzheimer´s disease as well as to improve cognition in healthy and cognitively impaired individuals. However, the mechanisms of these benefits are not well understood. The stress hypothesis suggests that the cognitive benefits attributed to exercise may partially be mediated by changes in the cortisol secretion pattern. Chronic stress may increase the risk of AD and exacerbate the cognitive deficits and brain pathology characteristic of the condition while physical activity has been shown to attenuate most of stress consequences and risk factors for AD. Initially, research on the effects of cortisol on cognition and physical activity focused on cortisol levels at one time point but the circadian pattern of cortisol secretion is complex and it is still unclear which aspects are most closely associated with cognitive function. Thus, the aim of this review was to analyze the exercise/stress/cognition hypothesis focusing on the effects of the diurnal cycle of cortisol on cognitive function and physical activity in older adults with and without cognitive impairment.

Key words: Alzheimer´s disease, exercise, physical activity, cognition, cortisol