



The Interaction Between Mental and Physical Fatigue

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Mental Fatigue (MF) can be defined as a psychobiological state that emerges during prolonged demanding cognitive activity and results in an acute feeling of tiredness, with potential decrements in physical and/or cognitive performance.

Over the last years several high-quality systematic review papers have been published that identified significant effects of mental fatigue on subsequent performance capacity. Given the abundance of papers on the performance aspect, there is significantly less information available about the mechanisms behind this reduced performance capacity. Interestingly, the reduction in physical performance in a mentally fatigued state is not mediated by an exacerbation of peripheral factors normally associated with physical fatigue. The negative effect of mental fatigue on exercise performance is mainly attributed to a higher-than-normal Rating of Perceived Exertion (RPE).

During the presentation we will focus on recent findings from lab-based studies looking at the effect of mental fatigue on performance. We will further try to identify potential mechanisms from the literature (as an example the accumulation of adenosine in the anterior cingulate cortex). Finally, some studies have already applied behavioural or nutritional countermeasures in an attempt to negate the negative effects of a mentally fatiguing task. We will explore some of these countermeasures in order to pinpoint their potential.

Keywords: Fatigue; brain; performance



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