Silvério L. C. (larissa8710@usp.br)[1] & Brito I. [2]
[1] Institute of Psychology, University of São Paulo
[2] Institute of Psychology, University of São Paulo

Bodily Regulation of Attention and Executive Control under Sustained Cognitive Demand

Sustained cognitive demands impair attentional efficiency, executive control, and subjective well-being, particularly under environmental distraction. Breathing-based practices have been proposed as low-cost strategies to support cognitive regulation, yet their acute effects under experimentally induced cognitive fatigue remain underexplored. This study examined the immediate effects of a single session of alternate nostril breathing on cognitive performance, perceived stress, and mental fatigue in young female university students exposed to prolonged sustained attention tasks. Participants were assigned to one of three conditions: alternate nostril breathing without auditory distraction, a neutral control activity, or alternate nostril breathing followed by traffic noise exposure. Cognitive fatigue was induced using a Continuous Performance Test, and executive performance was assessed with Stroop and Digit Span tasks. Subjective measures of stress, mental fatigue, perceived cognition, and well-being were collected, alongside exploratory salivary cortisol sampling. Alternate nostril breathing was associated with improved inhibitory control and immediate attention, as well as reduced perceived stress and mental fatigue, even under auditory distraction. These findings suggest that bodily regulatory processes contribute to cognitive control under high mental demand.

Keywords: sustained attention, executive control, cognitive fatigue, cognitive regulation, bodily processes

In G. Boleda, I. Dautriche, M. Maldonado, C. Saldana and T. Torrent (Eds.), *Proceedings of the 48th Annual Conference of the Cognitive Science Society*