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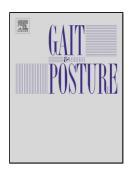
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ACCEPTED MANUSCRIPT

Effects of physical exhaustion on local dynamic stability and automaticity of walking

by Daniel Hamacher, Dennis Hamacher, Michèle Hohnbaum, Karsten Gerth, Lutz Schega & Astrid Zech

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Highlights:

- We rated effects of physical exhaustion on stability and automaticity of walking.
- Physical exhaustion led to improved gait stability during dual-task walking.
- Physical exhaustion led to improved dual-task costs.
- Gait automaticity might increase after total exhaustion in young adults.

Abstract

Background: While the effects of diseases, performance of proprioceptors, anxiety or pain on gait stability or automaticity of walking are well-explored, physical fatigue might be another relevant factor whose consequences are not sufficiently investigated, yet.

Research question: The aim of the current study was to evaluate the effect of physical exhaustion on local dynamic stability (LDS) and automaticity of gait.

Methods: In a randomized controlled trial, 30 young and healthy adults were randomly assigned to either a passive control group or a fatigue group. The participants assigned to the fatigue group passed a shuttle-run test which finished at

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