

Accepted Manuscript

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

Authors: Daniel Hamacher, Dennis Hamacher, Michèle Hohnbaum, Karsten Gerth, Lutz Schega, Astrid Zech



PII: S0966-6362(18)31474-7
DOI: <https://doi.org/10.1016/j.gaitpost.2018.08.031>
Reference: GAIPOS 6487

To appear in: *Gait & Posture*

Received date: 9-10-2017
Revised date: 14-8-2018
Accepted date: 24-8-2018

Please cite this article as: Hamacher D, Hamacher D, Hohnbaum M, Gerth K, Schega L, Zech A, Effects of physical exhaustion on local dynamic stability and automaticity of walking, *Gait and amp; Posture* (2018), <https://doi.org/10.1016/j.gaitpost.2018.08.031>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

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

^aInstitute of Sport Science, Friedrich Schiller University of Jena, Seidelstraße 20, 07749 Jena (Germany)

^bDepartment Sport Science, Otto von Guericke University Magdeburg, Zschokkestraße 32, 39104 Magdeburg (Germany)

Daniel Hamacher, PhD Corresponding author

e-mail: daniel.hamacher@uni-jena.de

phone: +49 (0) 3641 945713; fax: +49 (0) 3641 945702

Dennis Hamacher, PhD

e-mail: dennis.hamacher@ovgu.de

Michèle Hohnbaum

e-mail: m.hohnbaum@googlemail.com

Karsten Gerth

e-mail: gerth1@icloud.com

Lutz Schega, PhD

e-mail: lutz.schega@ovgu.de

Astrid Zech, PhD, PT

e-mail: astrid.zech@uni-jena.de

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

Download English Version:

<https://daneshyari.com/en/article/10129787>

Download Persian Version:

<https://daneshyari.com/article/10129787>

[Daneshyari.com](https://daneshyari.com)