

University of Groningen

Orthotic interventions to improve standing balance in somatosensory loss

Hijmans, Juha Markus

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version

Publisher's PDF, also known as Version of record

Publication date:
2009

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Hijmans, J. M. (2009). *Orthotic interventions to improve standing balance in somatosensory loss*. s.n.

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

Orthotic Interventions to Improve Standing Balance in Somatosensory Loss

The publication of this thesis was generously supported by:

Biometrics BV

Centrum voor Revalidatie, Universitair Medisch Centrum Groningen

D.H. Heijne Stichting / Basko Healthcare

Loth Fabenim

OIM Orthopedie

School of Behavioral and Cognitive Neurosciences

Stichting Beatrixoord Noord-Nederland

Hijmans, Juha M.

Orthotic Interventions to Improve Standing Balance in Somatosensory Loss

Dissertation University of Groningen, the Netherlands – With ref. – With
summary in Dutch.



FSC

Mixed Sources

Product group from well-managed
forests, controlled sources and
recycled wood or fibre

Cert no. CU-COC-811465

www.fsc.org

© 1996 Forest Stewardship Council

Printed by: Gildeprint, Enschede

Cover photo: Marleen van Dijk

ISBN: 978-90-367-3794-4

© J.M. Hijmans, Groningen, the Netherlands, 2009.

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronical or mechanical, including photocopy, recording or any information storage or retrieval system, without the prior written permission of the copyright owner.

RIJKSUNIVERSITEIT GRONINGEN

Orthotic Interventions to Improve Standing Balance in Somatosensory Loss

Proefschrift

ter verkrijging van het doctoraat in de
Medische Wetenschappen
aan de Rijksuniversiteit Groningen
op gezag van de
Rector Magnificus, dr. F. Zwarts,
in het openbaar te verdedigen op
woensdag 13 mei 2009
om 16.15 uur

door
Juha Markus Hijmans
geboren op 5 december 1978
te Enschede

Paranimfen

: Cornelis van de Kamp

: Sjouke Zijlstra

Promotores : Prof. dr. K. Postema
: Prof. dr. J.H.B. Geertzen

Copromotores : Dr. W. Zijlstra
: Dr. ir. A.L. Hof

Beoordelingscommissie : Prof. dr. J.E.J. Duysens
: Prof. dr. L. Peeraer
: Prof. dr. J.S. Rietman

ISBN : 978-90-367-3794-4

CONTENTS

Chapter 1	Introduction	9
Chapter 2	A systematic review of the effects of shoes and other ankle or foot appliances on balance in older people and people with peripheral nervous system disorders <i>Gait & Posture 25 (2007) 316–323</i>	23
Chapter 3	Foot and ankle compression improves joint position sense but not bipedal stance in older people <i>Gait & Posture 29 (2009) 322–325</i>	41
Chapter 4	Effects of vibrating insoles on standing balance in diabetic neuropathy <i>Journal of Rehabilitation Research & Development 45 (2008) 1442–1450</i>	55
Chapter 5	Development of vibrating insoles <i>International Journal of Rehabilitation Research 30 (2007) 343–345</i>	73
Chapter 6	Properties of noise to improve standing balance in people with diabetic neuropathy. A single case design <i>Submitted</i>	83
Chapter 7	General discussion	97
	Summary	117
	Samenvatting	123
	Dankwoord	129
	Curriculum Vitae	134
	Publications	135

