

SpringerBriefs in Specialty Topics in Behavioral Medicine

Series Editor
Joost Dekker

For further volumes:
<http://www.springer.com/series/11956>

Joost Dekker
Editor

Exercise and Physical Functioning in Osteoarthritis

Medical, Neuromuscular and Behavioral
Perspectives

 Springer

Editor

Joost Dekker

Department of Rehabilitation Medicine

and Department of Psychiatry

VU University Medical Center

Amsterdam, The Netherlands

ISBN 978-1-4614-7214-8

ISBN 978-1-4614-7215-5 (eBook)

DOI 10.1007/978-1-4614-7215-5

Springer New York Heidelberg Dordrecht London

Library of Congress Control Number: 2013943272

© The Author(s) 2014

This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed. Exempted from this legal reservation are brief excerpts in connection with reviews or scholarly analysis or material supplied specifically for the purpose of being entered and executed on a computer system, for exclusive use by the purchaser of the work. Duplication of this publication or parts thereof is permitted only under the provisions of the Copyright Law of the Publisher's location, in its current version, and permission for use must always be obtained from Springer. Permissions for use may be obtained through RightsLink at the Copyright Clearance Center. Violations are liable to prosecution under the respective Copyright Law.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

While the advice and information in this book are believed to be true and accurate at the date of publication, neither the authors nor the editors nor the publisher can accept any legal responsibility for any errors or omissions that may be made. The publisher makes no warranty, express or implied, with respect to the material contained herein.

Printed on acid-free paper

Springer is part of Springer Science+Business Media (www.springer.com)

Contents

1 Introduction	1
Joost Dekker	
Part I Osteoarthritis of the Knee or Hip	
2 Epidemiology, Pathogenesis, and Clinical Aspects of Knee and Hip Osteoarthritis	13
Diana C. Sanchez-Ramirez, Joost Dekker, and Willem F. Lems	
3 Therapeutic Options in Osteoarthritis of the Hip or Knee	27
Martijn Gerritsen, Ramon E. Voorneman, Joost Dekker, and Willem F. Lems	
Part II Functional Decline	
4 Risk Factors for Functional Decline in Osteoarthritis of the Knee or Hip	39
Marika van der Leeden, Cindy Veenhof, Leo D. Roorda, and Joost Dekker	
5 Neuromuscular Mechanisms Explaining Functional Decline	49
Martin van der Esch and Joost Dekker	
6 Behavioral Mechanisms Explaining Functional Decline	69
Jasmijn F.M. Holla, Martijn Pisters, and Joost Dekker	
Part III Exercise Therapy	
7 Regular Exercises in Knee and Hip Osteoarthritis	89
Marika van der Leeden, Wilfred Peter, and Joost Dekker	
8 Exercise Therapy Targeting Neuromuscular Mechanisms	95
Jesper Knoop, Martijn P.M. Steultjens, and Joost Dekker	

9 Exercise Aiming at Behavioral Mechanisms 109
Cindy Veenhof, Martijn Pisters, and Joost Dekker

**10 Comorbidity, Obesity, and Exercise Therapy in Patients
with Knee and Hip Osteoarthritis 119**
Mariëtte de Rooij, Willem F. Lems, Marike van der Leeden,
and Joost Dekker

11 Summary and Future Directions 127
Joost Dekker

Contributors

Mariëtte de Rooij Amsterdam Rehabilitation Research Center | Reade, Amsterdam, The Netherlands

Joost Dekker Department of Rehabilitation Medicine, VU University Medical Center, Amsterdam, The Netherlands

Department of Psychiatry, VU University Medical Center, Amsterdam, The Netherlands

Martijn Gerritsen Department of Rheumatology | Reade, Amsterdam, The Netherlands

Jasmijn F.M. Holla Amsterdam Rehabilitation Research Center | Reade, Amsterdam, The Netherlands

Jesper Knoop Amsterdam Rehabilitation Research Center | Reade, Amsterdam, The Netherlands

Willem F. Lems Department of Rheumatology, VU University Medical Center, Amsterdam, The Netherlands

Wilfred Peter Amsterdam Rehabilitation Research Center | Reade, Amsterdam, The Netherlands

Martijn Pisters Clinical Health Sciences, University Medical Center Utrecht, Utrecht, The Netherlands

Leo D. Roorda Amsterdam Rehabilitation Research Center | Reade, Amsterdam, The Netherlands

Diana C. Sanchez-Ramirez Faculty of Human Movement Sciences, VU University, Amsterdam, The Netherlands

Martijn P.M. Steultjens School of Health and Life Sciences, Institute for Applied Health Research, Glasgow Caledonian University, Glasgow, Lanarkshire, UK

Martin van der Esch Amsterdam Rehabilitation Research Center | Reade, Amsterdam, The Netherlands

Marike van der Leeden Amsterdam Rehabilitation Research Center | Reade, Amsterdam, The Netherlands

Cindy Veenhof Netherlands Institute for Health Services Research (NIVEL), Utrecht, The Netherlands

Ramon E. Voorneman Department of Rheumatology | Reade, Amsterdam, The Netherlands