

University of Groningen

Pharmaceutical care by clinical pharmacists in patients with musculoskeletal disease

Duyvendak, Michiel

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:

2010

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

Citation for published version (APA):

Duyvendak, M. (2010). Pharmaceutical care by clinical pharmacists in patients with musculoskeletal disease. Groningen: 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).

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.



**Pharmaceutical Care by
Clinical Pharmacists in Patients
with Musculoskeletal Disease**

Michiel Duyvendak

The research presented in this thesis was financially supported by:

De Friesland zorgverzekeraar, KNMP, Merck Sharpe & Dohme and NVZA

The printing of this thesis was financially supported by:

Alliance Healthcare, Amgen, Baxter, Bayer Healthcare, B.Braun, Boehringer Ingelheim, Centrafarm, Eurocept, Fresenius Kabi, GlaxoSmithKline, Merck Sharpe & Dohme, OPG Distrimed, Sanofi Aventis, Servier Nederland Farma, Stichting Interdisciplinaire Werkgroep Osteoporose (IWO), Teva Pharma Nederland and Warner Chilcott

The distribution of this thesis was financially supported by:

Antonius Zorggroep Sneek & Emmeloord

© 2010 Michiel Duyvendak

University of Groningen, The Netherlands

Pharmaceutical Care by Clinical Pharmacists in Patients with Musculoskeletal Disease

ISBN: 978-90-367-4537-6

Lay-out and cover design by

Robert Ellents, De Meern

Printed by

Optima Grafische Communicatie, Rotterdam

No part of this book may be reproduced in any manner or by any means without written permission of the author.

Voor Judith en Esther

RIJKSUNIVERSITEIT GRONINGEN

**Pharmaceutical Care by Clinical Pharmacists in
Patients with Musculoskeletal Disease**

Proefschrift

ter verkrijging van het doctoraat in de
Wiskunde en Natuurwetenschappen
aan de Rijksuniversiteit Groningen
op gezag van de
Rector Magnificus, dr. F. Zwarts,
in het openbaar te verdedigen op
vrijdag 8 oktober 2010
om 16:15 uur

door

Michiel Duyvendak

geboren op 23 maart 1976
te Oldenzaal

Promotor: Prof. dr. J.R.B.J. Brouwers

Copromotores: Dr. M. Naunton
Dr. E.N. van Roon

Beoordelingscommissie: Prof. dr. M.L. Bouvy (Universiteit Utrecht, Utrecht)
Prof. dr. H.J. Guchelaar (LUMC, Leiden)
Prof. dr. M.A.F.J. van de Laar (Universiteit Twente, Enschede)

Table of Contents

CHAPTER 1

Introduction.....	11
-------------------	----

PART I

Pharmaceutical Care in Patients at Risk of Corticosteroid-Induced Osteoporosis.....	33
---	----

CHAPTER 2

Systematic Review of Trends in Prophylaxis of Corticosteroid-Induced Osteoporosis.....	35
--	----

CHAPTER 3

Corticosteroid-Induced Osteoporosis Prevention.....	59
---	----

CHAPTER 4

Doctors' Beliefs and Knowledge on Corticosteroid-Induced Osteoporosis.....	71
--	----

CHAPTER 5

Multifaceted Interventions by Pharmacists: The Effect on Prevention of Corticosteroid-Induced Osteoporosis.....	89
--	----

PART II

Pharmaceutical Care in Patients Undergoing Orthopedic Surgery.....	109
--	-----

CHAPTER 6

Peri-Operative Drug Management.....	111
-------------------------------------	-----

CHAPTER 7

General Discussion.....	129
-------------------------	-----

CHAPTER 8

Summary.....	149
--------------	-----

CHAPTER 9

Samenvatting.....	157
-------------------	-----

Dankwoord.....	167
----------------	-----

Curriculum Vitae.....	175
-----------------------	-----

List of Publications.....	179
---------------------------	-----

Groningen Graduate School of Medical Sciences - Research Institute SHARE.....	185
---	-----

