

Cover Page



Universiteit Leiden



The following handle holds various files of this Leiden University dissertation:
<http://hdl.handle.net/1887/59497>

Author: Hooijmans, M.T.

Title: Quantitative MR in dystrophic muscle : It's more than fat

Issue Date: 2017-12-13

Lay-out and Printing: Guus Gijben; Proefschrift-aio.nl
Cover design by: Guus Gijben

ISBN: 978-94-92801-15-9
Copyright ©2017 M.T. Hooijmans

No part of this thesis may be reproduced or transmitted in any form or by any means,
without the prior permission of the author.

The research described in this thesis was supported by a grant from the Netherlands
Organization for Health Research and Development (ZonMW) (grant number
113302001).

Quantitative MR in Dystrophic Muscle **It's more than fat**

Proefschrift

ter verkrijging van
de graad van doctor aan de Universiteit van Leiden
op gezag van de Rector Magnificus prof. mr. C.J.J.M. Stolker,
volgens besluit van het College voor Promoties
te verdedigen op woensdag 13 december 2017
klokke 15:00 uur

door

Melissa Tamara Hooijmans

geboren te Zoetermeer
in 1989

Promotor: Prof. Dr. A.G. Webb
Co-promotores: Dr. H.E. Kan
Dr. E.H. Niks

Leden promotie-commissie: Prof. Dr. G.J. Strijkers
(Amsterdam Medical Center)
Dr. J.J. Prompers
(Technical University Eindhoven)
Prof. Dr. A.A.M. Aartsma-Rus

The work presented in this thesis was carried out at the C.J. Gorter Center, department of Radiology at the Leiden University Medical Center.

Financial support for printing of this thesis was kindly provided by Philips healthcare, the Netherlands.

Contents

| | | |
|-------------------|---|-----|
| Chapter 1 | General introduction | 7 |
| Chapter 2 | Evaluation of skeletal muscle DTI in patients with Duchenne Muscular Dystrophy <i>NMR Biomed. 2015 Nov;28(11):1589-97.</i> | 33 |
| Chapter 3 | Non-uniform muscle fat replacement along the proximodistal axis in Duchenne muscular dystrophy <i>Neuromusc Disor. 2017 Feb; 27:458-464</i> | 53 |
| Chapter 4 | Elevated phosphodiester and T2 levels can be measured in the absence of fat infiltration in Duchenne muscular dystrophy patients <i>NMR Biomed. 2017 Jan;30(1)</i> | 69 |
| Chapter 5 | Spatially localized phosphorous metabolism of skeletal muscle in Duchenne Muscular Dystrophy patients: 24 –month follow-up <i>Plos on. 2017 Aug; 12(8).</i> | 87 |
| Chapter 6 | Fast multi-station water/fat imaging at 3T using DREAM-based RF shimming. <i>J Magn Reson Imaging. 2015 Jul;42(1):217-23.</i> | 109 |
| Chapter 7 | Summary and general discussion | 125 |
| Chapter 8 | Nederlandse samenvatting | 143 |
| Appendices | List of publications | 148 |
| | Curriculum vitae | 152 |
| | Acknowledgements | 154 |

