

University of Groningen

Retinal stray light originating from intraocular lenses and its effect on visual performance

van der Mooren, Marie Huibert

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:
2016

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

Citation for published version (APA):

van der Mooren, M. H. (2016). *Retinal stray light originating from intraocular lenses and its effect on visual performance*. [Thesis fully internal (DIV), University of Groningen]. Rijksuniversiteit Groningen.

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.

Printed by: Scholma Print & Media

Cover: images edited by Robert Rosén

Lay-out: Bram Koopman

ISBN: 978-90-367-9038-3 (printed version)

ISBN: 978-90-367-9039-0 (electronic version)

Copyright © 2016, M. van der Mooren, Groningen, The Netherlands. All rights reserved.
No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording or any information storage or retrieval system, without the written permission of the copyright owners.



rijksuniversiteit
 groningen

Retinal stray light originating from intraocular lenses and its effect on visual performance

Proefschrift

ter verkrijging van de graad van doctor aan de
Rijksuniversiteit Groningen
op gezag van de
rector magnificus prof. dr. E. Sterken
en volgens besluit van het College voor Promoties.

De openbare verdediging zal plaatsvinden op
woensdag 21 september 2016 om 12.45 uur

door

Marie Huibert van der Mooren

geboren op 17 oktober 1960
te Eethen

Promotores

Prof. dr. N. M. Jansonius
Prof. dr. J.J.M. Hooymans

Copromotor

Dr. S.A. Koopmans

Beoordelingscommissie

Prof. dr. G.P.M. Luyten
Prof. dr.ir. G.J.Verkerke
Prof. dr. M-J. Tassignon

Preface

This thesis may be of importance for all those interested in quality of vision. Whenever I had to explain the sources causing retinal stray light and its effects on vision to my friends, colleagues and family, their interest was immediate because it is closely related to safety and healthy ageing.

Working in the field of vision science and ophthalmology became, was and is often an addiction. It is an honor spending my working time on the research, development and manufacturing of intraocular lenses in order to provide cataract patients with the best possible solutions. This thesis shows I was exceptionally fortunate that I had the opportunity to study and to discuss many different aspects, ranging from the physical background to the visual impact retinal stray light can have on patients.

This thesis is dedicated to my wife Angela, my daughter Juliette and my son Filip.

Marrie,

Engelbert, July 2016

Contents

Chapter 1	General Introduction	9
Chapter 2	Explanted multifocal intraocular lenses <i>van der Mooren M, Steinert R, Tyson F, Langeslag M, Piers P.</i> <i>J Cataract Refract Surg 2015; 41:873-877</i>	15
Chapter 3	Rostock Glare Perimeter: A distinctive method for Quantification of Glare <i>Meikies D, van der Mooren M, Terwee T, Guthoff RF, Stachs O.</i> <i>Optometry and Vision Science 2013;90:1143-1148</i>	25
Chapter 4	Comparison of Dysphotopsia Effects in Phakic and Pseudophakic Eyes using Rostock Glare Perimeter <i>Meikies D, van der Mooren M, Guthoff RF, Stachs O.</i> <i>Klin Monatsbl Augenheilkd 2013;230:1213-1219</i>	37
Chapter 5	Degradation of visual performance with increasing levels of retinal stray light <i>van der Mooren M, Rosén R, Franssen L, Lundström L, Piers P.</i> <i>Submitted to IOVS November 5th 2015</i>	53
Chapter 6	Combining in vitro test methods for measuring light scatter in intraocular lenses <i>van der Mooren M, van den Berg T, Coppens J, Piers P.</i> <i>Biomed Opt Express 2011; 2:505-510</i>	71
Chapter 7	Impact of intraocular lens material and design on light scatter: In vitro study <i>Langeslag MJM, van der Mooren M, Beiko GHH, Piers PA.</i> <i>J Cataract Refract Surg 2014; 40:2120–2127</i>	81
Chapter 8	Effect of glistenings in intraocular lenses <i>van der Mooren M, Franssen L, Piers P.</i> <i>Biomedical Opt Express 2013;8:1294-1304</i>	97
Chapter 9	General Discussion	115
	Summary	121
	Samenvatting	125
	Acknowledgement	128
	Curriculum Vitae	129

