

University of Groningen

## Physically active academic lessons

de Greeff, Johannes Wilhelmus

**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):*

de Greeff, J. W. (2016). *Physically active academic lessons: Effects on physical fitness and executive functions in primary school children*. [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.

Dissertation

**Physically active academic lessons:**  
Effects on physical fitness and executive functions  
in primary school children

**J.W. (Marck) de Greeff**

University of Groningen / University Medical Center Groningen  
Center for Human Movement Sciences  
June 2016

The studies described in this thesis have been conducted at the Center for Human Movement Sciences. This center is part of the University Medical Center Groningen and the University of Groningen, the Netherlands.

This study was financially supported by an Onderwijs Bewijs Grant from the Ministry of Education, Culture and Science (ODB10015).

PhD training was facilitated by the research school of Behavioral and Cognitive Neuroscience (BCN) and the Research Institute Science in Healthy Ageing and healthcaRE (SHARE), both part of the Graduate school for Medical Sciences.

Printing of this thesis was financially supported by:

- University Medical Center Groningen
- University of Groningen
- Graduate School of Medical Sciences



rijksuniversiteit  
 groningen



umcg

**ISBN**

978-90-367-9309-4 (printed version)

978-90-367-9308-7 (electronic version)

**Cover & Lay-out design**

[www.proefschriftopmaak.nl](http://www.proefschriftopmaak.nl), Groningen

**Print**

Netzodruk Groningen

© 2016, J.W. de Greeff, Groningen, the Netherlands. All rights reserved. No part of this thesis may be reproduced or transmitted in any form or by any means without the prior permission of the copyright owner.



rijksuniversiteit  
 groningen

# **Physically active academic lessons:** effects on physical fitness and executive functions in primary school children

## **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 30 november 2016 om 12.45 uur

door

**Johannes Wilhelmus de Greeff**

geboren op 3 april 1986  
 te Voorst

**Promotores**

Prof. dr. C. Visscher

Prof. dr. R.J. Bosker

**Copromotores**

Dr. E. Hartman

Dr. S. Doolaard

**Beoordelingscommissie**

Prof. dr. R. Nijhuis-Van der Sanden

Prof. dr. W. van Mechelen

Prof. dr. L.H.V. van der Woude





## TABLE OF CONTENTS

<b>Chapter 1</b>	
General introduction	9
<b>Chapter 2</b>	
Physical fitness and academic performance in primary school children with and without a social disadvantage	19
<b>Chapter 3</b>	
The relationship between socioeconomic status and executive functions: Is there a mediating role of physical fitness?	35
<b>Chapter 4</b>	
Effect of physically active academic lessons on Body Mass Index and physical fitness in primary school children	51
<b>Chapter 5</b>	
Long-term effects of physically active academic lessons on physical fitness and executive functions in primary school children	67
<b>Chapter 6</b>	
Summary and general discussion	87
<b>Appendices</b>	
Nederlandse samenvatting	96
Dankwoord	99
About the author	101
List of publications	102
Submitted for publication	
Proceedings and others	
Media	103
Research Institute SHARE	105



