

EEG during memory activation

A study of early functional brain changes in Alzheimer's disease
and Huntington's disease

Karin van der Hiele

ISBN: 978-90-9022272-1

Cover design by Eve Dumas

© 2007, K. van der Hiele, except (parts of) the following chapters:

Chapter 2, 3 and 5: Elsevier

Chapter 4: John Wiley & Sons, Inc

No part of this thesis may be reproduced in any form by print, photocopy, digital file, internet or any other means without written permission of the copyright owner.

The studies described in this thesis were performed at the Department of Clinical psychology, Health psychology and Neuropsychology at Leiden University and the Department of Neurology at Leiden University Medical Center, Leiden, the Netherlands. The studies were financially supported by a grant from the 'van Leeuwen Leerstoel'. Financial support for the publication of this thesis has been provided by Leiden University.

EEG during memory activation

A study of early functional brain changes in Alzheimer's disease
and Huntington's disease

Proefschrift

ter verkrijging van
de graad van Doctor aan de Universiteit Leiden,
op gezag van Rector Magnificus prof.mr. P.F. van der Heijden,
volgens besluit van het College voor Promoties
te verdedigen op donderdag 29 november 2007
klokke 16:15 uur
door

Karin van der Hiele
Geboren te Rotterdam
in 1976

Promotiecommissie

Promotores:

Prof. Dr. H.A.M. Middelkoop
Prof. Dr. J.G. van Dijk

Referent:

Prof. Dr. C.J. Stam (VU University Medical Center, Amsterdam)

Overige leden:

Prof. Dr. A.J.W. van der Does
Prof. Dr. R.A.C. Roos
Prof. Dr. P. Spinhoven

Contents

Chapter 1: General introduction	page 7
Chapter 2: Memory activation enhances EEG abnormality in mild cognitive impairment	page 27
Chapter 3: EEG and MRI correlates of mild cognitive impairment and Alzheimer's disease	page 41
Chapter 4: Memory activation reveals abnormal EEG in preclinical Huntington's disease	page 59
Chapter 5: EEG correlates in the spectrum of cognitive decline	page 73
Chapter 6: EMG activity in the EEG in Alzheimer's disease: noise or signal?	page 93
Chapter 7: EEG markers of future cognitive performance in the elderly	page 109
Chapter 8: General discussion & conclusions	page 127
Chapter 9: Summary	page 143
Nederlandse samenvatting	page 151
Acknowledgements	page 165
List of publications	page 166
Curriculum Vitae	page 167

