Curriculum vitae Anouk Marsman

Professional experience

From 2015 Postdoctoral researcher, Danish Research Centre for Magnetic Resonance

I am leading MR spectroscopy research at DRCMR and as such I initiated several neuroscientific studies on brain chemistry in health and disease. I am heading studies on normal ageing and neurodegenerative diseases, schizophrenia, and development of novel techniques. I am also a key player in collaborative and international consortium studies on e.g. migraine, diabetes and ultra-high field MRI method standardisation, where I am responsible for MR spectroscopy.

2013-2015 Postdoctoral research fellow, Johns Hopkins University School of Medicine

During my employment at the Department of Radiology and Radiological Science at Johns Hopkins University (Baltimore, MD, USA) I was involved in several MR spectroscopy studies on schizophrenia and first-episode psychosis in collaboration with the Department of Psychiatry and Behavioral Sciences at Johns Hopkins University. Together with the Department of Radiation Oncology and Molecular Radiation Sciences at Johns Hopkins University and the Department of Radiology at the University of Miami I worked on MR spectroscopic imaging of brain tumours.

2008-2013 PhD student, University Medical Center Utrecht

During my PhD at the Department of Psychiatry at the UMC Utrecht (The Netherlands) I initiated and successfully conducted the first 7T MR spectroscopy study on schizophrenia, in collaboration with the Department of Radiology at the UMC Utrecht. I gained extensive experience in MR methods development, MR data acquisition, neuropsychological testing and statistics. I planned and managed ethics applications, recruitment, scan and test sessions and dissemination.

Education

2008-2013	PhD Neuroscience, Brain Center Rudolf Magnus, Utrecht University (The Netherlands) Thesis “Glutamate and GABA in schizophrenia”
2001-2008	MSc Biology (cum laude), University of Groningen (The Netherlands) Research internships (6-9 months) at the University of Pennsylvania (USA) and Newcastle University (UK)

Selected academic activities

2016-2017	Guest associate editor, Frontiers in Psychiatry
2014-2015	Trainee member, Psychiatric MR Spectroscopy and Imaging Study Group Governing Committee, International Society for Magnetic Resonance in Medicine
2012	Consultant, Neurophyxia (‘s Hertogenbosch, The Netherlands)

I supervise BSc, MSc, MD, PhD students and postdocs and lectured several postgraduate, PhD, MD and MSc courses. I am a reviewer for many scientific journals including The Lancet Psychiatry, JAMA Psychiatry, Molecular Psychiatry, Schizophrenia Bulletin and the Journal of Magnetic Resonance Imaging.

Honors and awards

2014, '15, '17	Trainee stipend, International Society for Magnetic Resonance in Medicine
2014	Two Magna Cum Laude Merit Awards, International Society for Magnetic Resonance in Medicine
2008	Travel Award, International Society for Magnetic Resonance in Medicine
2007	Erasmus scholarship, European Union
2005, '06	Research fellow stipend, University of Pennsylvania
2005	Marco Polo scholarship, University of Groningen

List of publications

Bhogal AA, Schür RR, Houtepen LC, Van de Bank B, Boer VO, **Marsman A**, Barker PB, Scheenen T, Wijnen JP, Vinkers CH, Klomp DWJ. 1H-MRS processing parameters affect metabolite quantification: the urgent need for uniform and transparent standardization. NMR Biomed, 2017, accepted.

Marsman A, Mandl RCW, Klomp DWJ, Cahn W, Kahn RS, Luijten PR, Hulshoff Pol HE. Intelligence and brain efficiency: investigating the association between working memory performance, glutamate and GABA. Frontiers in Psychiatry, 2017, 8:154. doi: 10.3389/fpsyt.2017.00154

Posporelis S, Coughlin J, **Marsman A**, Pradhan S, Tanaka T, Wang H, Varvaris M, Ward R, Higgs C, Edwards JA, Ford CN, Kim PK, Lloyd AM, Edden RA, Schretlen D, Cascella NG, Barker PB, Sawa A. Decoupling of brain temperature and glutamate in recent-onset of schizophrenia: a 7 Tesla 1H-MRS study. Biol Psychiatry CNNI, 2017, in press. doi: http://dx.doi.org/10.1016/j.bpsc.2017.04.003

De Jonge JC, Vinkers CH, Hulshoff Pol HE, **Marsman A**. Neurobiological mechanisms of GABA in schizophrenia: a comprehensive review of postmortem and in vivo studies. Frontiers in Psychiatry, 2017, 8:118. doi: 10.3389/fpsyt.2017.00118

Marsman A, Boer VO, Luijten PR, Hulshoff Pol HE, Klomp DWJ, Mandl RCW. Detection of glutamate alterations in the human brain using 1H-MRS: Comparison of STEAM and sLASER at 7T. Frontiers in Psychiatry, 2017, 8:60. doi: 10.3389/fpsyt.2017.00060

Coughlin JM, Tanaka T, **Marsman A**, Wang H, Bonekamp S, Higgs C, Kim PK, Edwards JA, Varvaris M, Wang H, Posporelis S, Ma S, Tsujimura T, Edden RA, Pomper MG, Sedlak T, Do K, Schretlen D, Cascella NG, Barker PB, Sawa A. Decoupling of N-acetyl aspartate and glutamate within the dorsolateral prefrontal cortex in schizophrenia. Curr Mol Med, 2015, 15(2):176-183. doi: 10.2174/1566524015666150303104811

Marsman A, Mandl RCW, Klomp DWJ, Bohlken MM, Boer VO, Andreychenko A, Cahn W, Kahn RS, Luijten PR, Hulshoff Pol HE. GABA and glutamate in schizophrenia: a 7T 1H-MRS study. Neuroimage Clin, 2014, 6:398-407. doi: 10.1016/j.nicl.2014.10.005

Marsman A, Mandl RCW, Van den Heuvel MP, Boer VO, Wijnen JP, Klomp DWJ, Luijten PR, Hulshoff Pol HE. Glutamate changes in healthy young adulthood. Eur Neuropsychopharmacol, 2013, 23(11):1484-1490. doi: 10.1016/j.euroneuro.2012.11.003

Marsman A, Van den Heuvel MP, Klomp DWJ, Kahn RS, Luijten PR, Hulshoff Pol HE. Glutamate in schizophrenia: a focused review and meta-analysis of 1H-MRS studies. Schizophr Bull, 2013, 39(1):120-129. doi: 10.1093/schbul/sbr069

Book chapters

Marsman A. Magnetic resonance spectroscopy, In: Imaging of the brain (Dutch); Hulshoff Pol HE, Aleman A (eds.), Utrecht, The Netherlands, 2015: 23-32. https://www.tijdstroom.nl/boek/beeldvorming-van-het-brein/9789058982629#.WZQ8o1WrREY

Marsman A, Van den Heuvel MP, Hulshoff Pol HE, Glutamatergic neurotransmission in schizophrenia, In: Handbook of schizophrenia (Dutch); Cahn W, Krabbendam L, Myin-Germeys I, Bruggeman R, De Haan L (eds.), Utrecht, The Netherlands, 2011: 305-312. https://www.tijdstroom.nl/boek/handboek-schizofrenie/9789058981790#.WZQ8xVWrREY

Peer-reviewed international conference abstracts

Marsman A, Boer VO, Andersen M, Petersen ET. Real-time frequency and motion corrected Hadamard encoded spectral editing (CHASE). International Society for Magnetic Resonance in Medicine Annual Meeting, 2017

Andersen M, Boer VO, **Marsman A**, Petersen ET. A generalized prospective motion correction framework for improved spectroscopy, structural and angiographic imaging. International Society for Magnetic Resonance in Medicine Annual Meeting, 2017

Magnusson PO, Boer VO, **Marsman A**, Hanson LG, Petersen ET. GABA-edited echo-planar spectroscopic imaging (EPSI) with MEGA-sLASER at 7T. International Society for Magnetic Resonance in Medicine Annual Meeting, 2017

Lin Y, Lin D, Snoussi K, **Marsman A**, Maudsley AA, Sheriff S, Link K, Barker PB, Kleinberg L. Volumetric 3D analysis of high grade glioma at pre- and post-radiation therapy by magnetic resonance echo-planar spectroscopic imaging. International Society for Magnetic Resonance in Medicine Annual Meeting, 2017

Lin D, Lin Y, Link K, **Marsman A**, Zessler A, Sheriff S, Maudsley AA, Kleinberg L, Barker PB. Echo-planar MR spectroscopic imaging pre- and post-radiotherapy in patients with high grade glioma, American Society for Therapeutic Radiology and Oncology Annual Meeting, 2016

Pradhan S, **Marsman A**, Ward R, Ford C, Lloyd A, Schretlen D, Sawa A, Barker PB, A 7T MRS study of first episode psychosis: glutamatergic abnormalities and correlations with symptom severity, International Society for Magnetic Resonance in Medicine Annual Meeting, 2016

Marsman A, Sheriff S, Lin D, Redmond K, Maudsley A, Barker P, Kleinberg L, Echo-planar MR spectroscopic imaging pre and post radiation therapy in patients with high grade glioma, American Society for Therapeutic Radiology and Oncology Annual Meeting, 2015

Coughlin J, Tanaka T, Ford CN, Kim PK, Hayes LN, **Marsman A**, Barker PB, Sawa A, Alterations in markers associated with oxidative stress, inflammation, and protein misfolding in patients with recent onset psychosis, Society of Biological Psychiatry Annual Scientific Meeting, 2015

Marsman A, Pradhan S, Ford C, Lloyd A, Tanaka T, Sawa A, Barker PB, N-acetyl-aspartyl glutamate in first-episode psychosis, International Society for Magnetic Resonance in Medicine Annual Meeting, 2015

Marsman A, Sheriff S, Lin DD, Maudsley AA, Kleinberg L, Barker PB, Volumetric MRSI as a tool to guide and monitor radiotherapy treatment in patients with glioma, International Society for Magnetic Resonance in Medicine Annual Meeting, 2015

Houtepen LC, Schür RR, Boer V, van de Bank B, Scheenen TWJ, **Marsman A**, Vinkers CH, Klomp D, The effect of software processing pipelines on 7T MRS metabolite quantification, International Society for Magnetic Resonance in Medicine Annual Meeting, 2015

Cascella N, Posporelis S, Tanaka T, **Marsman A**, Varvaris M, Coughlin J, Edden R, Schretlen D, Barker P, Sawa A, Brain temperature and glutamate in recent onset schizophrenia: a 7 tesla MRS study, International Conference on Early Psychosis, 2014

Marsman A, Mandl RCW, Klomp DWJ, Bohlken MM, Boer VO, Andreychenko A, Cahn W, Kahn RS, Luijten PR, Hulshoff Pol HE, GABA, glutamate and intellectual ability in health and schizophrenia: a 7T 1H-MRS study, Society for Neuroscience Conference, 2014

Tanaka T, Coughlin JM, **Marsman A**, Wang H, Bonekamp S, Kim PK, Higgs C, Posporelis S, Varvaris M, Edden RAE, Pomper M, Schretlen D, Cascella N, Barker PB, Sawa A, Blood glutathione correlates with cortical glutamate levels and cognitive functions, Society for Neuroscience Conference, 2014

Marsman A, Mandl RCW, Klomp DWJ, Bohlken MM, Boer VO, Andreychenko A, Cahn W, Kahn RS, Luijten PR, Hulshoff Pol HE, GABA and glutamate in schizophrenia: a 7T 1H-MRS study, International Society for Magnetic Resonance in Medicine Annual Meeting, 2014

Marsman A, Mandl RCW, Klomp DWJ, Boer VO, Andreychenko A, Cahn W, Kahn RS, Luijten PR, Hulshoff Pol HE, GABA, glutamate and intellectual ability, International Society for Magnetic Resonance in Medicine Annual Meeting, 2014

Marsman A, Mandl RCW, Klomp DWJ, Bohlken MM, Boer VO, Andreychenko A, Cahn W, Kahn RS, Luijten PR, Hulshoff Pol HE, GABA and glutamate in schizophrenia: a 7T 1H-MRS study, Biennial Schizophrenia International Research Conference, 2014

Marsman A, Mandl RCW, Klomp DWJ, Boer VO, Andreychenko A, Cahn W, Kahn RS, Luijten PR, Hulshoff Pol HE, GABA, glutamate and intellectual ability, Biennial Schizophrenia International Research Conference, 2014

Posporelis S, Tanaka T, **Marsman A**, Varvaris M, Coughlin JM, Edden R, Schretlen D, Cascella N, Barker PB, Sawa A, Brain temperature and glutamate in recent onset schizophrenia: a 7 tesla MRS study, Biennial Schizophrenia International Research Conference, 2014

Marsman A, Boer VO, Van den Heuvel MP, Luijten PR, Hulshoff Pol HE, Klomp DWJ, Mandl RCW, Reproducibility of glutamate measurement in the human brain with 1H-MRS at 7T; evaluation of the sLASER sequence, International Society for Magnetic Resonance in Medicine Annual Meeting, 2012

Marsman A, Mandl RCW, Klomp DWJ, Van den Heuvel MP, Luijten PR, Hulshoff Pol HE, Glutamate levels in the frontal lobe decrease during young adulthood, Society for Neuroscience Conference, 2011

Marsman A, Klomp DWJ, Wijnen JP, Van den Heuvel MP, Boer VO, Luijten PR, Hulshoff Pol HE, Glutamate levels in the frontal lobe decrease during young adulthood, International Society for Magnetic Resonance in Medicine Annual Meeting, 2011

Marsman A, Van den Heuvel MP, Mandl RCW, Kahn RS, Hulshoff Pol HE, Glutamatergic neurotransmission changes with age in schizophrenia, FENS Forum of European Neuroscience, 2010

Marsman A, Van den Heuvel MP, Mandl RCW, Kahn RS, Hulshoff Pol HE, Glutamate in schizophrenia: a meta-analysis, Biennial Schizophrenia International Research Conference, 2010

Marsman A, Banks S, Avinash D, Van Dongen HPA, Dinges DF, Dynamics of slow wave activity after 5 nights of 4-hour sleep restriction, European Sleep Research Society Conference, 2006

Marsman A, Heinsbroek ACM, Van Dijk G, Does prenatal stress influence the development of insulin resistance?, Dutch Endo-Neuro-Psycho Meeting, 2005

Invited lectures

Edited MRS: techniques and use in neuroscientific studies, Division of Magnetic Resonance, Korea Basic Science Institute, 2016 (Ochang, South Korea).

Magnetic resonance spectroscopy at an ultra-high field of 7T and its possibilities for neuropsychiatric research, Functional Imaging Unit, Copenhagen University Hospital Glostrup, 2015

MRS findings on glutamatergic compounds in schizophrenia, Danish Research Centre for Magnetic Resonance, Copenhagen University Hospital Hvidovre, 2015

Glutamate and GABA in schizophrenia, Symposium “Ultra-high field imaging of the human brain”, University Medical Center Utrecht, 2013

^{1}H-MRS in the healthy and schizophrenic brain: focus on glutamate, F.M. Kirby Research Center for Functional Brain Imaging, Johns Hopkins University, 2012

Glutamate and schizophrenia: is there a link with the immune system? International Congress on Schizophrenia Research, 2011

Glutamate and GABA: in vivo nuclear magnetic resonance spectroscopy, Dutch Psychiatric Association, 2010, 2011, 2012