# Marion Smits.

Marion is an internationally active Neuroradiologist who combines clinical work with scientific research into applied physiological MR neuroimaging, such as functional MRI, diffusion and perfusion imaging. She uses these techniques to visualise the brain's function and microarchitecture, and to study pathophysiological and regenerative processes in a variety of neurological diseases. Her main focus is on neuro-oncology.

Marion combines her clinical expertise with scientific research and active participation in key international organisations, including the European Society of Radiology (ESR), the European Society of Neuroadiology (ESNR), the European Society for Magnetic Resonance in Medicine and Biology (ESMRMB), the International Society for Magnetic Resonance in Medicine (ISMRM), the European Organisation for Research and Treatment of Cancer (EORTC), and the National Brain Tumor Society (NBTS). She uses this unique combination of affiliations to establish productive connections between relevant clinical research questions and to implement scientific innovation in clinical practice, while disseminating knowledge and expertise through her numerous national and international teaching activities.

#### CURRENT RESPONSIBILITIES AND AFFILIATIONS

## Associate Professor and Neuroradiologist

Erasmus MC - University Medical Centre Rotterdam, Rotterdam/NL

- · Alzheimer Centre South West Netherlands, Rotterdam/NL
- Brain Tumour Centre, Rotterdam/NL

#### Honorary Consultant and Reader

University College London Hospital NHS Foundation Trust, London/UK

## Congress President

ESNR 41st annual meeting 2018, Rotterdam/NL

## Chair-Elect

**EORTC Imaging Group** 

## General Secretary of the Board

Section of Neuroradiology of the Radiological Society of the Netherlands

#### National Delegate for the Netherlands

- · European Society of Neuroradiology (ESNR)
- Union Européenne des Médecins Specialistes (UEMS) division of Neuroradiology

## Co-chair

Erasmus MC Neuroradiology fellowship programme, Rotterdam/NL

## Active member [upon invitation]

- ESR European Imaging Biomarker Alliance (EIBALL) Subcommittee
- ESNR Diagnostic committee chair of neuro-oncology working group
- Dutch Brain Tumour Registry
- Dutch Guideline Committee on quality of neuro-oncological care
- Dutch Guideline Committee on brain metastasis
- ISMRM MRI Value Initiative
- Brain Tumor Imaging Standardization Steering Committee
- EORTC Brain Tumour and Imaging Groups
- ESMRMB Nominations and Awards Committee
- Quantitative Imaging Biomarker Alliance (QIBA) working group on ASL

# CURRICULUM VITÆ AUGUST 2017

- Congress President ESNR 2018
- Visiting Professor at Memorial Sloan Kettering Cancer Center (2018) and Johns Hopkins Medical Institution (2015)
- Scientific Programme Committee Chair ESMRMB 2015
- Course director fMRI & DTI for the ESMRMB School of MRI
- ESR Leadership Institute
- Young Health Council ('JongGR')

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- PhD cum laude (2008)
- EUR Fellowship
- Lourens Penning Prize
- Marie Curie Fellowship

# 97

invited lectures

## 85

journal publications

## 5.0

average impact factor

## 24

H-index (Web of Science)

## €1.5 million

funding obtained 2009-2017



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born

30 April 1972, Lugarawa/TZ

nationality:

Dutch

medical license/NL: 79048428201

#### **CURRICULUM VITÆ**

I am ideally positioned to perform my clinically oriented research and disseminate my knowledge and expertise, due to my combined clinical and scientific appointment in the largest academic hospital in the Netherlands and my extensive national and international network.

My work consist of four inter-related and equally important pillars:

1.	Clinical patient carepage 3	
2.	Researchpage 4	
3.	Teachingpage 7	
4.	Promoting neuroimaging innovations in clinical practicepage 8	
Appendices:		
	Publicationspage 11	
	Presentationspage 26	

#### **WORKING HISTORY**

Honorary Consultant and Reader 2014-present University College Hospital London/UK Head of department: Prof. dr. X. Golay

#### **Associate Professor**

2012-present Erasmus MC, Rotterdam/NL Head of department: Prof. dr. G.P. Krestin

## **Consultant Neuroradiologist**

2009-present Erasmus MC, Rotterdam/NL Head of department: Prof. dr. G.P. Krestin

#### **Assistant Professor**

2011-2012 Erasmus MC, Rotterdam/NL Head of department: Prof. dr. G.P. Krestin

## Neuroradiology clinical fellow

2007-2009 Erasmus MC, Rotterdam/NL Head of department: Prof. dr. G.P. Krestin

# Marie Curie European research fellow

2003-2004 Department of Radiology, University

Hospitals K.U.Leuven/BE

Principal investigators: Prof. dr. S. Sunaert, Prof. dr. P. van Hecke

PhD research: Imaging in minor head injury 2002-2008 Erasmus MC, Rotterdam/NL

Principal investigator: Prof. dr. M.G.M. Hunink

#### Resident in Radiology

2000-2008 Erasmus MC, Rotterdam/NL Head of department: Prof. dr. G.P. Krestin

## Resident in Neurology

1999-2000 St. Lucas/Andreas Hospital, Amsterdam/NL Head of department: Dr. J. Vanneste

Junior/senior house officer in General Medicine/UK 1999 The North Hampshire Hospital, Basingstoke 1999 Finchley Memorial Hospital, London 1998-1999 Walsall Manor Hospital NHS Trust, Walsall

#### **FDUCATIONAL HISTORY**

## Neuroradiology subspecialisation

1 April 2009 Radiological Society of the Netherlands

## Doctor of Philosophy cum laude

25 June 2008 Erasmus University Rotterdam/NL

PhD supervisor: Prof. dr. M.G.M. Hunink

Full specialist qualification in Radiology 1 April 2008 Erasmus MC, Rotterdam/NL

## Radiology certificate

13 February 2003 **Radiological Society of the Netherlands** 

# Radiation Protection for Radiologists (level 3M)

4 October 2001 IRS Leiden/NL

#### Doctor of Medicine with distinction

2 February 1998 Maastricht University/NL

#### **Arts and Sciences**

1994-1995 Maastricht University/NL

Environmental philosophy, History and philosophy of natural sciences, History of sociology, 20th Century philosophy of consciousness, Literature interpretation according to Freud and Jung, Medical ethics

## electives

## (Neuro)radiology

1997 University Hospital Maastricht/NL

International electives in Cardiology and Child Psychiatry

1993 McMaster University, Hamilton, Ontario (CA)

selected completed courses

ESR Leadership Institute workshop 2013 Management in Radiology, Barcelona/ES

Erasmus MC Leadership Programme 2013 Erasmus MC, Rotterdam/NL

Basic course on research organisation and regulation for clinical researchers (BROK) 2015, 2011 Erasmus MC, Rotterdam/NL

Basic teaching qualification (BKO) 2013 Individual supervision, Rotterdam/NL 2011 Teach the teacher module III, Rotterdam/NL

PhD student management 2011 Hakuna Matata, Rotterdam/NL

Female Career Development Programme 2009-2010 Erasmus MC, Rotterdam/NL

European Course cycle on Neuroradiology (ECNR) 2008-2009 Rome/IT, Tarragona/ES, Basel (CH)

Erasmus Courses CNSI, CNSII, Head & Neck 2002, 2007, 2010 Brussels/BE, London, Bruges/BE

MSc Module Memory and Attention 2005 Helmholtz Institute, Utrecht/NL

Epidemiology Summer Programme 2003, 2004, 2005 NIHES, Rotterdam/NL

Radiologic Pathology 2003 Armed Forces Institute of Pathology, Washington DC/US

Basic and Advanced Applied MR Techniques 2001, 2002 School of MRI, Paris/FR, Madrid/ES

## CLINICAL PATIENT CARE

My clinical work encompasses the full spectrum of diagnostic Neuroradiology and Head & Neck Radiology. I use my specific expertise in neuro-oncology and neurodegenerative disease, at respectively the Erasmus MC Brain Tumour Centre and the Alzheimer Centre Southwest Netherlands. Nationally, I am a leading expert in the clinical application of functional MRI and DTI for brain tumour surgery.

Beyond patient care, I work on developing guidelines and procedures, and quality assurance. I am in charge of the MR neuroimaging protocols that ensure the highest quality and implementation of imaging techniques. I am a strong advocate for several innovations in clinical Radiology, such as structured reporting, protocol harmonisation, and integrated diagnostics.

Together with my counterparts in other disciplines, I have achieved the following:

- several templates such as for the reporting of brain tumour follow-up and diagnosis of dementia are now in place;
- together with the Alzheimer Centre we are harmonising dementia imaging protocols within the Rotterdam region;
- within the Brain Tumour Centre we are integrating imaging, histopathology and molecular biology in the final diagnosis.

The logistics for these innovations are challenging but an important aim to keep working towards.

#### RESEARCH LINE & RESEARCH GROUP

Applied physiological neuroimaging is my research line, which aims to provide imaging markers of brain physiology and disease that are directly clinically applicable. My research is now primarily focused on neuro-oncology, while I previously also studied neurodegenerative disease and recovery after stroke.

The clinical application and implementation of physiological neuroimaging techniques, commonly only used in the research arena, are an essential aspect of my research. I pursue my research goals through the continuous interplay between technical innovation of imaging techniques and clinical practice. My combined clinical (40%) and research (60%) appointment makes this possible.

Since obtaining my PhD in 2008 (±4.5 research man-years) I supervised 5 PhD theses to completion. My current research group consists of 3 PhD students, 3 post-doctoral researchers, 1 clinical fellow, and a variable number of MSc students. I work closely with the MRI physics group (PI: dr. J. Hernandez Tamames) and Biomedical Imaging Group Rotterdam (BIGR, PI: prof. dr. W. Niessen). I conduct this research in close collaboration with clinically oriented researchers, both nationally and internationally, including Neurologists, Neuro Oncologists, Neurosurgeons, Rehabilitation Physicians, (Neuro)Psychologists, and Neurolinguists.

I have an honorary appointment at UCL NHS Foundations Trust in London/UK, where I did a 6 months' research sabbatical in 2014, and continue to collaborate with the MR physics group (PI: prof. dr. X. Golay).

## SUPERVISION ACTIVITIES & ACHIEVEMENTS

PhD student supervision (as 'co-promoter')

## F. Incekara

2016 MR phenotyping of brain tumour genotypes: the iGENE study.

#### S.R. van der Voort

2016 MR radiogenomics in neuro-oncology: the iGENE study.

# R. Gahrmann

2014 Imaging response assessment in neuro-oncology.

## R. Meijboom

2012 Imaging of brain connectivity in dementia: clinical implications for diagnosis of its underlying diseases. PhD obtained on 31 January 2017 at Erasmus University Rotterdam, Rotterdam/NL, now post-doctoral researcher at Centre for Clinical Brain Sciences, University of Edinburgh, Edinburgh/UK.

#### E.E. Bron

2011 Advanced MRI analysis for computer-aided diagnosis of dementia. PhD obtained on 9 March 2016 at Erasmus University Rotterdam, now post-doctoral researcher at Erasmus MC, Rotterdam/NL.

## R.M.E. Steketee

2009 Advanced MR neuroimaging in early stage presenile dementia. PhD obtained on 5 February 2016

at Erasmus University Rotterdam, now post-doctoral researcher at Erasmus MC, Rotterdam/NL.

#### C.P. Méndez Orellana

2009 Functional MRI of language processing and recovery. PhD obtained on 30 June 2015 at Erasmus University Rotterdam, now assistant professor at Pontificia Universidad Católica de Chile, Santiago de Chile/CL.

## J. Papma

2008 Vascular versus non-vascular MCI: the FIND study. PhD obtained on 7 December 2012 at Erasmus University Rotterdam, now research coordinator at Alzheimer Centre Southwest Netherlands, Rotterdam/ NL.

# Other supervision

E. Warnert, post-doctoral researcher 2017-present *Development of physiological imaging techniques for dementia.* 

E.E. Bron, post-doctoral researcher 2016-present *Image analysis techniques for neurodegenerative disease.* 

R.M.E. Steketee, post-doctoral researcher 2016-present *Advanced imaging in dementia*.

**G.** Kapsas, European School of Radiology fellow 2017-present *Neuro-oncological imaging.* 

#### M.M.M.E. Habeeb, MSc student

2017 Arterial spin labelling MRI in diagnosis of dementia: longitudinal imaging, clinical implementation, and MR sequence evaluation.

## E. Carey, MSc student

2017 Language function assessment and white matter tract invasion in presumed pre-operative low-grade glioma patients.

#### L. Ham. MSc student

2015 Resting state functional MRI and diffusion tensor imaging in dementia.

#### F. Incekara, MSc student

2014-2016 Functional deficits of language tract tumour invasion.

#### S. Detiger, MSc student

2014 Resting state functional MRI in dementia.

### E. Gravesteijn, MSc student

2014 Neurophysiology of hunger and satiety.

#### S. Kalloe, MSc student

2013 Cerebellar lateralisation of language in left-handers.

#### R. Zuur, MSc student

2013 Resting state functional MRI in dementia.

# J.C. Kabagema, MSc student

2012 Resting state fMRI of brain tumour patients.

#### R. Meijboom, MSc student

2012 Functional MRI of memory and emotion recognition in dementia.

## A. Weterings, MSc student

2012 Functional MRI of language recovery in aphasia.

## I. Boukrab, MSc student

2012 Functional MRI of satiety in obese children.

#### L. Carati, MSc student

2012 Brain tumour response assessment on MRI in the multicentre BELOB study.

## S. Ooms, MSc student

2011 Value of arterial spin labelling in dementia.

## R. Gahrmann, MSc student

2011 MR imaging of the brain in paroxysmal kinesigenic dyskinesia.

# R. Tjiong, MSc student

2011 DSC perfusion characteristics of high-grade gliomas.

## A. Bechan, MSc student

2010-2011 Brain plasticity in melodic intonation language therapy after aphasic stroke.

#### S. Klip, MSc student

2009 Processing of speaking versus singing in healthy valunteers.

#### D. Bos, MSc student

2007 Optimisation of fMRI hypercapnia paradigms at 1.5T and 3.0T.

## C.P. Kralt, MSc student

2006 Comparison of fMRI analysis software packages.

# D.A. van Rijssel, MSc student

2006 Cost-effectiveness of selective CT in minor head injury: methodology.

#### **GRANT ALLOCATION**

Koningin Wilhemina Fonds: €1,218,641 2017-2021 Glioma Longitudinal AnalySiS in the Netherlands: GLASS-NL (co- applicant: workpackage leader; projectnumber 11026)

## Koningin Wilhemina Fonds: €480,000

2015-2019 Non-invasive phenotyping of molecular brain tumour profiles using novel advanced MR imaging and analysis (main applicant)

Johns Hopkins Medical Institution: \$10,000

2015 Milosh Perovitch visiting professorship (personal grant)

## Tour de Rotterdam: €45,000

2015-2016 Dementia diagnosis: better and faster (main applicant)

Coolsingel Foundation: €35,000

2012-2014 The VESPA study: multivendor reproducibility of brain perfusion measured with arterial spin labeling MRI (main applicant)

Erasmus MC grant: €150,000

2011-2015 Brain plasticity of language recovery after aphasic stroke (main applicant)

Erasmus MC grant: €150,000

2011-2015 Advanced MR Neuroimaging in presenile dementia: early differentiation between Alzheimer's disease and frontotemporal dementia by multimodal analysis (co-applicant)

Coolsingel Foundation: €45,000

2010-2011 Automated digital assessment of MR imaging in dementia (main applicant)

EUR Trust Fund: €50,000

2011-2012 Uncovering synchronous neural processes associated with building and maintaining trust-based economic exchanges using fMRI-based hyperscanning (co-applicant)

EUR Trust Fund: €25,000

2011 Integrated EEG-fMRI scanning (co-applicant)

EUR Fellowship: €200,000

2009-2013 Advanced MR Neuroimaging in presentle dementia (main applicant, personal grant)

GE Healthcare Educational Funding: €6,000 2008 Regional course on radiology-anatomy correlation

Van Walree Fund: €1,250

2007 Royal Netherlands Academy for Arts and Sciences (main applicant, personal grant)

ZonMW DO (945-06-309): €125,600

2006-2008 Cost-effectiveness of CT in minor head injury (co-investigator)

Marie Curie European Research Fellowship: €10,800 2003-2004 functional MRI at the Catholic University Leuven/BE (main applicant, personal grant)

#### INTERNATIONAL RESEARCH VISITS

Johns Hopkins Medical Institution - Department of Neuroradiology - Visiting Professor (1 month) 2015 Baltimore, MD/US

University College London National Hospital for Neurology and Neurosurgery 'Queen Square' - hon. Consultant and Reader (6 months on site, continued appointment)

2014-present London/UK

K.U.Leuven Department of Radiology - Marie Curie research fellow (9 months) 2003-2004 Leuven/BE

#### HONOURS AND AWARDS

**Visiting Professor** 

2018 Memorial Sloan Kettering Cancer Center, New York, NY/US

Knowledge Ambassador City of Rotterdam 2015-present City of Rotterdam/NL

'Milosh Perovitch' Visiting Professor 2015 2015 Johns Hopkins Medical Institution, Baltimore, MD/US

Third Prize European Brain Expert Contest 2008 2008 GE Healthcare, Milwaukee, IL/US

Lourens Penning Prize 2007 2007 Section of Neuroradiology, Radio

2007 Section of Neuroradiology, Radiological Society of the Netherlands/NL

Nomination Dutch Radiology Conference Prize 2007 12<sup>th</sup> Dutch Radiology Conference, Rotterdam/NL

ISMRM Educational Stipend

2007 Joint annual meeting ISMRM-ESMRMB, Berlin/DE

Organisation for Human Brain Mapping Travel Award 2006 Human Brain Mapping 12<sup>th</sup> annual meeting, Florence/IT

Nomination Ernst Schering Prize 2004 9<sup>th</sup> Dutch Radiology Conference, Noordwijkerhout/NL

First prize for oral presentation

1998 **10**<sup>th</sup> European Conference for Students and Young Doctors, Berlin/DE

Nomination Ernst Schering Prize

1998 3<sup>rd</sup> Dutch Radiologist Radiology Conference, Veldhoven/NL

First prize for poster presentation 1998 2<sup>nd</sup> Maastricht Medical Students Research Conference, Maastricht/NL

## MISCELLANEOUS RESEARCH ACTIVITIES

## PhD review committee

R. Meijboom ('co-promotor')

31 January 2017 Imaging of brain connectivity in dementia: clinical implications for diagnosis of its underlying diseases.

L. Blanken ('kleine commissie' secretary)

9 November 2016 The neurobiology of childhood psychiatric symptoms in the general population.

E.E. Bron ('co-promotor')

9 March 2016 Advanced MRI analysis for computeraided diagnosis of dementia.

R.M.E. Steketee ('co-promotor')

5 February 2016 Advanced MR neuroimaging in early stage presenile dementia.

E.G.P. Dopper ('kleine commissie')

4 September 2015 Familial frontotemporal lobar degeneration: phenotypical characterization of presymptomatic and clinical disease stages.

C.P. Méndez Orellana ('co-promotor')

30 June 2015 Functional MRI of language processing and recovery.

V. Verlinden ('grote commissie')

18 March 2015 **Epidemiology of gait and daily functioning.** 

J. Papma ('co-promotor')

7 December 2012 **Vascular versus non-vascular MCI: the FIND study.** 

## M. Luijten ('kleine commissie')

23 November 2012 **Neurocognitive insights in nicotine addiction.** 

#### M. Michielsen ('grote commissie')

18 June 2012 Reflections on mirror therapy after stroke: Mechanisms and effectiveness for improving hand function.

# journal peer review

JAMA, Annals of Internal Medicine, PLoS One, NeuroImage, , Neurobiology of Aging, NeuroImage:Clinical, American Journal of Neuroradiology, Radiology, Neuroradiology, Insights into Imaging, Brain Imaging and Behavior, Archives of Physical Medicine and Rehabillitation, British Journal of Surgery, European Journal of Radiology, Journal of Magnetic Resonance Imaging, Psychiatry Research: Neuroimaging, Journal of Healthcare Engineering, Journal of Neuroimaging, Clinical Neuroradiology, Otolaryngology.

# grant review

ZonMW Health Care Efficiency Research Programme/ NL, ZonMW Veni Programme/NL, The Brain Tumour Charity/UK, Research Foundation Flanders/BE, Swiss National Science Foundation/CH.

#### **TEACHING**

Teaching is a key part of my work to advance neuroimaging by bringing new techniques into clinical practice. As co-chair of the Neuroradiology fellowship programme at Erasmus MC, I apply my passion for training the next generation of radiologists in Neuroradiology in the Netherlands.

I frequently teach for several professional societies in the international Radiology community, at training courses, invited lectures, and conferences. I am permanent faculty member of the two most important European courses in Neuroradiology (ECNR) and MRI techniques (ESMRMB School of MRI). I have furthermore organised numerous European courses for the Neuroradiological and Neuroscientific community.

## **TEACHING ACTIVITIES**

Local & national teaching

see also page 26.

#### Neuroradiology

2017-present national Neuroradiology subspecialist education ('differentianten'), Society of Radiology of the Netherlands, Utrecht/NL

Neuroanatomy and Neuroradiology 2008-present Regional Radiology specialist education ('aios'), Erasmus MC Rotterdam/NL

MR neuroimaging: technique and protocols 2011-present Regional Radiology specialist education ('aios'), Erasmus MC Rotterdam/NL

Imaging in dementia 2016 Clinical Technology, Erasmus MC Rotterdam/NL

Imaging of neurodegenerative disease 2008, 2010, 2011 Geriatrics/Neurology specialist education, Erasmus MC Rotterdam/NL

#### MR neuroimaging

2009, 2010, 2011 Rehabilitation specialist education, Rijndam Rotterdam/NL

## Introduction to Radiology

2001-2008 Medicine (5<sup>th</sup> year), Erasmus MC Rotterdam/NL

Advanced neuroimaging in aphasia 2005, 2007 Postgraduate education for speech therapists, Erasmus MC Rotterdam/NL

Epidemiology and medical decision making 2003-2006 Medicine (5<sup>th</sup> year), Erasmus MC Rotterdam/NI

Medical decision making practicals 2006 Medicine (4<sup>th</sup> year), Erasmus University Rotterdam/NL

Validation of decision rules for the use of CT in minor head injury 2006 NIHES Summer Programme, Rotterdam/NL

International teaching

see also page 26.

Course organiser 2017 Level III ESNR course on glioma imaging, Milan/IT

Permanent faculty member 2011-present European course of Neuroradiology (ECNR)

Permanent faculty member 2009-present European School of MRI: fMRI & DTI in clinical practice

Radiology training & fellowships

2011-2014 Radiology specialist training programme (residency) selection interviewing board.

TEACHING QUALIFICATION

Basic teaching qualification ('BKO') 2013 Individual supervision, Rotterdam/NL 2011 Teach the teacher module III, Rotterdam/NL

#### PROMOTING NEUROIMAGING INNOVATIONS IN CLINICAL PRACTICE

The dissemination of knowledge and insight gained from my research is the crucial fourth pillar of my work. Clinical implementation of physiological MR neuroimaging proves challenging, and many techniques that have been available for decades remain only available for fundamental research.

I make a dedicated effort to break the boundaries between the research arena and clinical practice and vice versa. I hold key positions in multiple national and international professional and multidisciplinary societies and have an extensive network that I use to promote my research in clinical practice and establish collaborations. These efforts include:

- developing clinical guidelines and recommendations for advanced imaging techniques;
- implementing imaging standardisation in multicentre clinical trials;
- publishing book chapters and guest-editing special journal issues;
- raising public awareness of neuroimaging through (social) media and web sites;
- participating in international alliances dedicated to promote imaging techniques;
- presiding and promoting scientific meetings, the latter having resulted in my appointment as Knowledge Ambassador by the city of Rotterdam.

These activities represent many years' work on advancing clinicians' *and* public awareness of a new imaging techniques.

## LEADERSHIP POSITIONS

#### **Congress President**

2015-present 2018 ESNR annual meeting

## Chairman-elect

2017-present EORTC Imaging Group

## General Secretary of the Board

2012-present Section of Neuroradiology of the Radiological Society of the Netherlands

Board member (Treasurer, Vice-Chair) 2013-2017 EORTC Imaging Group

# Course director

2012-2016 ESMRMB School of MRI: fMRI & DTI in clinical practice

## ESR-RSNA joint symposium committee

2012-2016 Joint symposium at annual meetings

# Scientific Programme Committee Chairman

2013-2015 **2015 ESMRMB Annual Meeting** 

# Executive Board member

2013-2015 **ESMRMB** 

Young Health Council of the Netherlands member 2011-2013 The Health Council of the Netherlands (Jonge Gezondheidsraad), The Hague/NL

## Course organiser

2012 ESMRMB fMRI & DTI hands-on course, Paris/FR

#### **Guest editor**

2012 MemoRad Dutch Radiology Journal special issue: fMRI and DTI

# Scientific Programme Committee member

2013-present WFNRS Symposium Neuroradiologicum, Istanbul/TR 2014.

## Scientific Programme Committee member

2011-present ESMRMB annual scientific meeting

Lisbon/PT, Toulouse/FR

# Scientific Programme & Organising Committee 2011-2013 Dutch Radiology Conference, of which

chairman in 2012

#### Initiatior and Chairman

2011-2012 Radiology Junior Clinical Researchers

Group, Erasmus MC

#### Local course organiser

2009 ESMRMB fMRI & DTI hands-on course, Rotterdam/NL

## Editor-in-chief

2008-2010 Radiology department's journal "De

Beeldspraak", Erasmus MC

## Chairman

2005 MRI user meetings, Erasmus MC

#### President

2002-2004 Junior Doctors' Association Erasmus MC

#### Chairman

2002, 2003 Organisation committee of the Junior Doctors' Research Day Erasmus MC

#### **EXTERNAL CONSULTANCY**

2016-present Independent reviewer for Parexel Intl. Trial review for EORTC-1410 (±€150,000)

2015-present Consultancy for Quantib B.V. (no personal financial compensation)

## INTERNATIONAL ALLIANCES

2017-present Quantitative Imaging Biomarker Alliance (QIBA) working group on arterial spin labelling

2016-present European Imaging Biomarker Alliance (EIBALL)

2014-present Brain Tumor Imaging Standardization Steering Committee in the National (USA) Brain Tumor Society

2015-present ISMRM MRI Value Initiative

2013-2016 European COST action for arterial spin labelling in dementia (BM1103)

#### GUIDELINE & POLICY DEVELOPMENT

2015-present Dutch national registry for brain tumours

2012-present Quality criteria for neuro-oncological care in the Netherlands

2013 Dutch glioma guidelines

2008 MR imaging protocol for EORTC brain tumour trials

## **BOOK CHAPTERS**

see page 11.

#### PUBLISHED RECOMMENDATIONS

Grade M, Hernandez Tamames JA, Pizzini FB, Achten E, Golay X, **Smits M**. *A Neuroradiologist's guide to Arterial Spin Labeling MRI in clinical practice*. Neuroradiology 2015;57:1181-202.

Ellingson BM, Bendszus M, Boxerman JL, Barboriak D, Erickson BJ, **Smits M**, Nelson SJ, Gerstner E, Alexander B, Goldmacher G, Wick W, Vogelbaum M, Weller M, Galanis E, Kalpathy-Cramer J, Shankar L, Jacobs P, Pope WB, Yang D, Chung C, Knopp MV, Cha S, van den Bent MJ, Chang S, Yung WKA, Cloughesy TF, Wen PY, Gilbert MR. Consensus recommendations for a standardized brain tumor imaging protocol (BTIP) in clinical trials. Neuro Oncol 2015;17:1188-98.

Alsop DC\*, Detre JA\*, Golay X\*, Günther M\*, Hendrikse J\*, Hernandez-Garcia L\*, Hanzhang L\*, Macintosh BL\*, Parkes LM\*, **Smits M**\*, Van Osch MJP\*, Wang DJJ\*, Wong EC\*, Zaharchuk G\*. Recommended Implementation of Arterial Spin Labeled Perfusion MRI for Clinical Applications: A consensus of the ISMRM Perfusion Study Group and the European Consortium for ASL in Dementia. Magn Reson Med 2015;73:102-16. \*authors listed in alphabetical order.

#### PUBLIC UNDERSTANDING OF RADIOLOGY

## Imaging of brain tumours

25 January 2015 **Public meeting on brain tumours, Maarssen/NL** 

Web site explaining brain tumour imaging 2013-present www.hersentumor.nl

#### Advanced MRI of dementia

10 June 2013 National television: [Over leven met... dementie] 'On living with... dementia' (NTR)

RSNA on the Air: fMRI in brain tumour patients 2 December 2009 Radio interview broadcast by "Rural Health Today"/US with audience of ~983,000

Functional MRI for the assessment of marketing skills of sales people

12 November 2006 National television: Business Class (RTL7)

Basics of MRI as part of the exhibition "Pain and Pleasure"

2005-2006 Museum of Natural History, Rotterdam/NL

## MEMBERSHIP OF PROFESSIONAL SOCIETIES

2012-present International Society for Magnetic Resonance in Medicine (ISMRM)

2012-present Head and Neck Radiology section of the Radiological Society of the Netherlands

2011-present European Low Grade Glioma Network

2010-present **EORTC**, **Brain Tumour and Imaging groups** 

2010-present Dutch Society for Neuro Oncology (LWNO)

2010-present European Society of Neuroradiology (ESNR)

2008-present European Society of Magnetic Resonance in Medicine and Biology (ESMRMB)

2007-present European Society of Radiology (ESR)

2006-present Neuroradiology section of the Radiological Society of the Netherlands

2000-present Radiological Society of North America (RSNA)

2000-present Radiological Society of the Netherlands (NVvR)

2012-2015 European Institute for Biomedical Imaging Research (EIBIR) Cancer Imaging working group [upon invitation]

2000-2008 Erasmus MC Junior Doctor's Association (president 2002-2004)

# **MISCELLANEOUS**

 $2009, 2011\ \mbox{Judge}$  for the BBC public speaking competition.

#### **PUBLICATIONS**

## PhD thesis

Smits M. Imaging in Minor Head Injury. Early Complications and Late Consequences. 2008. ISBN 978-90-9022918-8.

# book chapters

Nederveen AJ, Caan MWA, **Smits M**. *General Principles of Magnetic Resonance Imaging*. In: Imaging in neurodegenerative disorders. Saba L (ed). Oxford University Press, Oxford 2015. ISBN 978-0-19-967161-8.

Pizzini F, **Smits M**, Wesolowski R, Chapell M, Jäger R, Mutsaerts HJ, Hernandez-Tamames J. *Arterial Spin Labeled MRI perfusion imaging techniques*. In: Perfusion Imaging in Clinical Practice: A multimodality diagnostic approach to tissue perfusion analysis. Saremi F (ed). Wolters Kluwer, Philadelphia 2015. ISBN 978-1-4511-9316-9.

Méndez Orellana CE, Visch EG, **Smits M**. Functional imaging of language processing: basic principles and acquired insights. Published in Dutch in: Het (voor)beeldig brein. Robert E, Visch-Brink E, Beeckman A (eds). Antwerp-Apeldoorn Garant publishers 2013. ISBN 978-90-441-3026-3.

## peer-reviewed articles

	Impact Factor	or (2015)
Ме	an IF Marion Smits	5.0
	H-index Marion Smits (Web of Science)	
Ave	Average citations per item	
Ме	an IF subject category "neuroimaging"	2.7
Ме	an IF subject category "radiology, nuclear medicine & medical imaging"	2.6
	2017	
1	Van den Bent, <b>Smits M</b> , Kros HM, Chang S. <i>Diffuse Infiltrating Oligodendroglioma and Astrocytoma</i> . J Clin Oncol, in press.	21.0
2	<b>Smits M</b> , Van den Bent M. <i>Imaging correlates of adult glioma genotypes.</i> Radiology 2017;284:316-331. (invited paper)	6.8
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- 98. Schraa-Tam CK, Van der Lugt A, Frens MA, **Smits M**, Van Broekhoven P, Van der Geest JN. *Visual-vestibular stimulation of different temperature (200C VS 430C): An fMRI study*. MAGMA 2005;18:S210.
- 99. Schraa-Tam CK, Van der Lugt A, Frens MA, **Smits M**, Van Broekhoven P, Van der Geest JN. *A comparison of the bilateral and unilateral vestibular (caloric) stimulations: An fMRI study*. MAGMA 2005;18:S210-211.
- 100.**Smits M**, Kovacs S, De Ridder D, Peeters R, Van Hecke P, Sunaert S. Lateralization of signal change in the auditory pathway in patients with lateralized tinnitus studied with functional Magnetic Resonance Imaging (fMRI). Abstract book International Tinnitus Seminar 2005:45.
- 101.Kovacs S, Peeters R, **Smits M**, De Ridder D, Van Hecke P, Sunaert S. *Activation of cortical and subcortical auditory structures at 3T by means of an fMRI paradigm suitable for clinical use*. Abstract book International Tinnitus Seminar 2005:41.
- 102.Schraa-Tam CKL, Van der Lugt A, Frens MA, Van Broekhoven FCA, **Smits M**, Van der Geest JN. *Brain areas activated by bilateral caloric vestibular stimulation with visual stimuli: An fMRI study.* Electronic supplement NeuroImage 2005;26:1421.
- 103.**Smits M**, Kovacs S, De Ridder D, Peeters R, Van Hecke P, Sunaert S. *Lateralisatie van functionele MRI-signaalverandering in het centrale auditieve systeem bij patiënten met gelateraliseerde tinnitus*. Ned Tijdschr Geneeskd 2004;148:2570-2571.
- 104. Smits M, Kovacs S, De Ridder D, Peeters R, Van Hecke P, Sunaert S. Lateralization of signal change in the auditory pathway in patients with lateralized tinnitus studied with functional Magnetic Resonance Imaging (fMRI).

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  Radiological Society of North America 2004:281.
- 105. Smits M, Dippel DWJ, De Haan GG, Tanghe HLJ, Hunink MGM. Indications for computed tomography (CT) in patients with minor head injury: validation of published decision rules and individual risk factors. Radiological Society of North America scientific assembly and annual meeting program, Oak Brook, IL. Radiological Society of North America 2004:161.
- 106.Schraa-Tam CK, **Smits M**, Van der Lugt A, Van der Geest JN. *Functional Magnetic Resonance Imaging (fMRI) of vestibular and visual interactions in caloric vestibular stimulation*. Radiological Society of North America scientific assembly and annual meeting program, Oak Brook, IL. Radiological Society of North America 2004:241.
- 107.**Smits M**, Dippel DWJ, De Haan GG, Tanghe HLJ, Hunink MGM. *Indications for computed tomography (CT) in patients with minor head injury: validation of published decision rules and individual risk factors*. Supplement MemoRad 2004;9:30-31.

- 108.**Smits M**, Kovacs S, De Ridder D, Peeters R, Van Hecke P, Sunaert S. *Lateralization of signal change in the auditory pathway in patients with lateralized tinnitus studied with functional Magnetic Resonance Imaging (fMRI)*. Supplement MemoRad 2004;9:28.
- 109.**Smits M**, Kovacs S, De Ridder D, Peeters R, Van Hecke P, Sunaert S. *Lateralization of signal change in the auditory pathway in patients with lateralized tinnitus studied with functional Magnetic Resonance Imaging (fMRI)*. MAGMA 2004;16:S131.
- 110.Schraa-Tam CK, Van der Lugt A, Frens MA, **Smits M**, Van Broekhoven PC, Van der Geest JN. *fMRI of visual and vestibular interaction*. MAGMA 2004;16:S183-184.
- 111.**Smits M**, Peeters RR, Van Hecke P, Sunaert S. *A 3T event-related functional Magnetic Resonance Imaging (fMRI) study of natural taste perception*. Proc Intl Soc Mag Reson Med 2004;11:1051.
- 112.Tam C, Van der Geest JN, **Smits M**, Van der Lugt A. *Rest conditions in fMRI: exploring the differences*. Proc Intl Soc Mag Reson Med 2004;11:2542.
- 113.Peeters RR, Sunaert S, **Smits M**, Van Hecke P. *Optimization of 3D EPI SENSE techniques for fMRI of highly inhomogeneous areas*. Proc Intl Soc Mag Reson Med 2004;11:1028.
- 114.**Smits M**, Dippel DWJ, De Haan GG, Tanghe, HLJ, Hunink MGM. *Indications for Computed Tomography (CT) in patients with minor head injury: generalization of a published decision rule*. Radiological Society of North America scientific assembly and annual meeting program, Oak Brook, IL. Radiological Society of North America 2003:182.
- 115.**Smits M**, Dippel DWJ, De Haan GG, Tanghe, HLJ, Hunink MGM. *Indications for Computed Tomography (CT) in patients with minor head injury: generalization of a published decision rule*. Supplement MemoRad 2003;8:29-30.
- 116.**Smits M**, Wilmink JT, Vles JSH. *Synostotic and positional plagiocephaly: two types of skull deformity studied with 3D Computed Tomography (CT)*. Supplement MemoRad 1998;3:39-40.

#### **PRESENTATIONS**

## invited lectures

Imaging patterns suggestive of different (molecular) subtypes of low-grade gliomas 4 March 2018 European Congress of Radiology, Vienna/AT

## Non-enhancing brain tumors

March 2018 European Congress of Radiology, Vienna/AT

## Imaging in glioma: clinical practice from 220 centres throughout Europe

10 November 2017 ESNR Advanced Course in Diagnostic Neuroradiology – Glioma Imaging, Milan/IT

## *Imaging of brain metastases patients*

7 October 2017 7th annual brain metastases research and emerging therapy conference, Marseille/FR

#### Standardized Brain tumor protocols

15 September 2017 40th annual meeting of the ESNR, Malmö/SE

#### Functional imaging - ASL in dementia

14 September 2017 40th annual meeting of the ESNR, Malmö/SE

#### *Imaging of brain tumours - updated*

20 & 22 June 2017 Sandwich Course of Radiology, Ede/NL

## fMRI and DTI of the auditory and language systems

16 June 2017 ESMRMB School of MRI - fMRI&DTI in clinical practice, Porto/PT

17 June 2016 ESMRMB School of MRI – fMRI&DTI in clinical practice, Barcelona/ES

27 June 2014 ESMRMB School of MRI – fMRI&DTI in clinical practice, London/UK

31 May 2013 ESMRMB School of MRI – fMRI&DTI in clinical practice, Rotterdam/NL

25 May 2012 ESMRMB School of MRI - Clinical fMRI&DTI, Uppsala/SE

25 March 2011 ESMRMB School of MRI – Clinical fMRI&DTI, Leuven/BE

25 May 2010 ESMRMB School of MRI - Clinical fMRI&DTI, Milan/IT

16 October 2009 ESMRMB School of MRI - Clinical fMRI&DTI, Thessaloniki/GR

#### Advanced MR diagnostics in clinical neurooncology

18 May 2017 Nordic Society of Neuroradiology Meeting, Copenhagen/DK

## Advanced imaging neuro-oncology

17 May 2017 Subspecialty Radiology training ('differentiantenonderwijs'), Utrecht/NL

## Glioblastoma

7 May 2017 European Course of Neuroradiology, Antwerp/BE

## Quantitative MR imaging markers in dementia

26 April 2017 55th annual meeting of the American Society of Neuroradiology, GE Breakfast Symposium, Long Beach, CA/US

#### Imaging biomarker for clinical trials in brain tumours

2 March 2017 European Congress of Radiology, Vienna/AT

#### Advanced MRI techniques

1 March 2017 European Congress of Radiology, Vienna/AT

## Brain Trauma

1 March 2017 European Congress of Radiology, Vienna/AT

4 March 2016 European Congress of Radiology, Vienna/AT

#### Neuroradiology of brain tumours

12 October 2016 EURO-CNS course on neuropathology, Amsterdam/NL

8 June 2015 EURO-CNS course on neuropathology, Odense/DK

19 September 2012 EURO-CNS course on neuropathology, Zagreb/HR

#### ASL: technical considerations, brain tumour, cerebrovascular disease

1 October 2016 ESMRMB annual meeting teaching session, Vienna/AT

#### ASL in Alzheimer's disease

17 September 2016 39th annual meeting of the European Society of Neuroradiology, Belgrade/RS

## Challenges and opportunities in Neuro MR

18 July 2016 Gordon Research Conference: In vivo MR, Andover, NH/US

#### Non-traumatic CNS emergencies

- 2 March 2016 European Congress of Radiology, Vienna/AT
- 2 December 2015 100th annual meeting of the Radiological Society of North America, Chicago, IL/US
- 5 March 2015 European Congress of Radiology, Vienna/AT
- 3 December 2014 100th annual meeting of the Radiological Society of North America, Chicago, IL/US
- 7 March 2014 European Congress of Radiology, Vienna/AT
- 4 December 2013 99th annual meeting of the Radiological Society of North America, Chicago, IL/US

## CNS emergencies: Interactive case discussion

- 2 March 2016 European Congress of Radiology, Vienna/AT
- 2 December 2015 100th annual meeting of the Radiological Society of North America, Chicago, IL/US
- 5 March 2015 European Congress of Radiology, Vienna/AT
- 3 December 2014 100th annual meeting of the Radiological Society of North America, Chicago, IL/US
- 7 March 2014 European Congress of Radiology, Vienna/AT
- 4 December 2013 99th annual meeting of the Radiological Society of North America, Chicago, IL/US

## Molecular Imaging and phenotypes of brain tumors

18 September 2015 38th annual meeting of the European Society of Neuroradiology, Naples/IT

#### Advanced multimodal imaging for brain tumors

17 September 2015 38th annual meeting of the European Society of Neuroradiology, Naples/IT

#### Imaging of metabolism and blood flow in dementia (MRI/PET)

18 May 2015 British Institute of Radiology, London/UK

#### fMRI and DTI of brain tumours

8 April 2015 European Course of Neuroradiology, Rhodes/GR

## Brain tumours: type, grade and genetics

8 April 2015 European Course of Neuroradiology, Rhodes/GR

# Standardisation of imaging in neuro-oncology

27 March 2015 EORTC-EANO-ESMO, Istanbul/TR

# Optimised imaging for trials in brain tumours

7 March 2015 European Congress of Radiology, Vienna/AT

#### Imaging correlates of brain tumour genotypes

5 March 2015 European Congress of Radiology, Vienna/AT

## Advanced MR neuroimaging techniques

4 March 2015 European Congress of Radiology, Vienna/AT

6 March 2014 European Congress of Radiology, Vienna/AT

## Functional neuroanatomy: motor system, sensory system, cognition

10 November 2014 European Course of Neuroradiology, Antalya/TR

#### MR perfusion imaging

25 October 2014 XLIII Annual meeting of the Spanish Society of Neuroradiology, Seville/ES

## DTI in clinical practice

25 October 2014 XLIII Annual meeting of the Spanish Society of Neuroradiology, Seville/ES

## fMRI in clinical practice

25 October 2014 XLIII Annual meeting of the Spanish Society of Neuroradiology, Seville/ES

#### fMRI: BOLD and beyond

11 September 2014 XXth Symposium Neuroradiologicum, Istanbul/TR

#### Multimodal imaging

11 September 2014 XXth Symposium Neuroradiologicum, Istanbul/TR

#### Neuroanatomy of behavior and higher functions

19 April 2016 European Course of Neuroradiology, Rhodes/GR

6 April 2014 European Course of Neuroradiology, Athens/GR

#### Coma, vegetative persistent state, brain death

19 April 2016 European Course of Neuroradiology, Rhodes/GR

6 April 2014 European Course of Neuroradiology, Athens/GR

# The use of Arterial Spin Labeling in non-vascular brain disease

6 March 2014 European Congress of Radiology, Vienna/AT

## Advanced MR imaging of brain tumours

25 January 2014 Patient information day, Maarssen/NL

#### fMRI as a clinical and research tool

31 October 2013 Annual Congress of the NL Society of Physical and Rehabilitation Medicine, Noordwijk/NL

## Diffusion tensor imaging in clinical practice

19 October 2013 ESMRMB School of MRI - Advanced Neuro Imaging, Split/HR

25 October 2012 ESMRMB School of MRI – Advanced Neuro Imaging, Antwerp/BE

## Review of existing studies on ASL in dementia

1 October 2013 COST ASL Training School for physicists, Toulouse/FR

## Assessing brain scans from the memory clinic

19-20 June 2013 Sandwich Course on Neuroradiology, Ede/NL

## Arterial spin labelling MRI in clinical practice: current and future applications

22 May 2013 51st Annual Meeting of the American Society of Neuroradiology, San Diego, CA/US

## fMRI Tips&Tricks

9-10 April 2013 European Course of Neuroradiology, Athens/GR

# Advanced MR neuroimaging in multicentre trials: Experience from the EORTC Brain Tumour Group

8 March 2013 European Congress of Radiology, Vienna/AT

#### Functional MRI of the Brain

17 January 2013 Erasmus School of Accounting & Assurance Executive Programme, Rotterdam/NL

19 January 2012 Erasmus School of Accounting & Assurance Executive Programme, Rotterdam/NL

## Functional neuroanatomy

14 December 2012 ESMRMB Hands-on Course: fMRI&DTI in Clinical Practice, Paris/FR

## Diffusion tensor imaging: presurgical evaluation of white matter tracts

6 October 2012 ESMRMB annual meeting teaching session, Lisbon/PT

#### fMRI for the MRI-tech

6 October 2012 ESMRMB annual meeting teaching session, Lisbon/PT

## Neuroradiology of brain tumours

19 September 2012 EURO-CNS course on neuropathology, Zagreb/HR

## What is the proven role of perfusion weighted imaging?

7-8 September 2012 EANO 10th annual meeting, Marseille/FR

# Poster highlights: Advanced neuroimaging of brain tumours

7-8 September 2012 EANO 10th annual meeting, Marseille/FR

DSC perfusion imaging in clinical practice

20 July 2012 GE Healthcare application specialist training, Paris/FR

Neurotrauma: the evidence

26 June 2012 Trauma physicians' regional meeting, Antwerp/BE

fMRI of vascular disease

24 April 2012 Dutch vascular meeting, Noordwijk/NL

Neurotrauma

3 April 2012 Siemens CT users day, Dordrecht/NL

DTI of vascular disorders

28-30 October 2011 European Course of Neuroradiology, Tarragona/ES

fMRI of vascular disorders

28-30 October 2011 European Course of Neuroradiology, Tarragona/ES

Round table discussion: "MR tractography: why DTI is not enough" 8 October 2011 ESMRMB annual meeting teaching session, Leipzig/DE

Perfusion weighted imaging: DSC, DCE or ASL?

8 October 2011 ESMRMB annual meeting teaching session, Leipzig/DE

Advanced brain tumour imaging

21, 24 June 2011 Sandwich Course Neuroradiology, Ede/NL

Perfusion imaging of brain tumours

10 June 2011 Dutch Society for Radiotherapy and Oncology, Utrecht/NL

Clinical symptoms correlated with anatomy

3 March 2011 European Congress of Radiology, Vienna/AT

Imaging in minor head injury: early complications and late consequences

19 January 2011 Benecke Annual Symposium of Neurology, Utrecht/NL

Morbus Behçet, Antiphospholipid syndrome and Susac syndrome: imaging

15 April 2010 7<sup>th</sup> International Conference Course of the Dutch Society of Neuroradiology, Groningen/NL

Clinical applications of fMRI & DTI

6 November 2009 ESMRMB Hands-on fMRI&DTI, Rotterdam/NL

Evidence based medicine in neurotrauma imaging

18 July 2009 International Symposium on State-of-the-Art Imaging, Taormina/IT

Imaging and neurovascular intervention in acute stroke

18 July 2009 International Symposium on State-of-the-Art Imaging, Taormina/IT

Neuro-applications at 3T: what can you expect?

10 March 2007 European Congress of Radiology – GE Healthcare lunch symposium, Vienna/AT

Fusion of fMRI and diffusion tensor: practical applications

23 September 2006 ESMRMB - GE Healthcare lunch symposium, Warsaw/PL

## conference presentations

- Gahrmann R, Leemans A, Van der Holt B, Vernhout RM, Bromberg J, Taal W, Vos J, De Groot JC, Hanse M, Van den Bent MJ, **Smits M**. Minimum apparent diffusion coefficient (ADCmin) decrease after bevacizumab and lomustine predicts overall survival (OS) in recurrent glioblastoma. 40th annual scientific meeting of the ESNR 2017, Malmö/SE.
- 2. Thust S, Yousry T, Bargallo N, Vernooij MW, **Smits M**. *Glioma Magnetic Resonance Imaging Practices in Europe:*Results from the European Society for Neuroradiology (ESNR) Diagnostic Subcommittee Survey on Glioma Imaging.
  RSNA 2016, Chicago, IL/US: oral presentation.

- 3. Gahrmann R, Van den Bent M, Van der Holt B, Vernhout R, Taal W, Taphoorn MJB, De Groot JC, Beerepoot L, Jasperse B, **Smits M**. *Radiological response assessment in the era of bevacizumab: RANO or volumetry? A report from the BELOB trial*. SNO annual meeting, Scottsdale, AZ/US: oral presentation (selected as 'Daily Highlight').
- 4. Thust S, Yousry T, Bargallo N, Vernooij MW, **Smits M**. *Glioma Magnetic Resonance Imaging Practices in Europe:*Results from the European Society for Neuroradiology (ESNR) Diagnostic Subcommittee Survey on Glioma Imaging.
  ESMRMB 2016, Vienna/AT: oral presentation.
- 5. Incekara F, Satoer D, Visch-Brink E, Vincent A, **Smits M**. *Correlation between pre-operative cognitive deficits and language white matter tract invasion in presumed low grade glioma patients*. ESMRMB 2016, Vienna/AT: oral presentation.
- 6. Tjiong R, Van den Bent M, **Smits M**. *High diagnostic accuracy of dynamic susceptibility contrast (DSC) magnetic resonance (MR) perfusion imaging to distinguish radiation necrosis from recurrent tumor in high grade glioma patients*. European Congress of Radiology, Vienna/AT, 1-5 March 2012: oral presentation.
- 7. **Smits M**, Seelaar HC, Van Swieten JC, Van der Lugt A. *Neuroimaging in dementia: how to get your head around it.* Radiological Society of North America 96<sup>th</sup> Scientific Assembly and Annual Meeting, Chicago, IL/US, 28 Nov-3 Dec 2010: educational exhibit.
- 8. **Smits M**, Van den Hauwe L, Steens SC, Meiners LC. *Beware the MS mimics: Behçet's, antiphospholipid, and Susac's disease.* Radiological Society of North America 96<sup>th</sup> Scientific Assembly and Annual Meeting, Chicago, IL/US, 28 Nov-3 Dec 2010: educational exhibit.
- 9. Klip SHJ, Van de Sandt-Koenderman WME, Van der Meulen AC, Van der Lugt A, Visch-Brink EG, **Smits M**. *Spoken versus melodic language processing in healthy volunteers: an fMRI study.* European Congress of Radiology, Vienna/AT, 4-8 March 2009: oral presentation.
- 10. Michielsen ME, Selles RW, Van der Geest JN, Eckhart M, Stam HJ, Ribbers GM, Bussmann JBJ, **Smits M**. Functional improvement and cortical reorganisation after mirror therapy in stroke patients: a randomised, controlled trial. European Congress of Radiology, Vienna/AT, 4-8 March 2009: oral presentation.
- 11. Smits M, Dippel DWJ, Houston GC, Wielopolski PA, Hunink MGM, Van der Lugt A. Brain plasticity of selective attention processing in patients with chronic postconcussion syndrome after complicated minor head injury. Radiological Society of North America 95<sup>th</sup> Scientific Assembly and Annual Meeting, Chicago, IL/US, 29 Nov-4 Dec 2009: oral presentation.
- 12. **Smits M**, Dippel DWJ, Houston GC, Wielopolski PA, Hunink MGM, Van der Lugt A. *Brain plasticity of selective attention processing in patients with chronic postconcussion syndrome after complicated minor head injury.*European Society for Magnetic Resonance in Medicine and Biology 26th Annual Meeting, Antalya/TK, 1-3 Oct 2009: oral presentation.
- 13. **Smits M**, Dippel DWJ, Houston GC, Wielopolski PA, Koudstaal PJ, Hunink MGM, Van der Lugt A. *Compensatory brain activity of selective attention in patients with postconcussion syndrome one month after minor head injury.* European Congress of Radiology, Vienna/AT, 6-10 March 2009: oral presentation.
- 14. **Smits M,** Vincent A, Bruininks S, Wielopolski P, Van der Lugt A. *Functional MRI and diffusion tensor imaging in clinical practice: everything you need to know from acquisition to interpretation.* Radiological Society of North America 94<sup>th</sup> Scientific Assembly and Annual Meeting, Chicago, IL/US, 30 Nov-5 Dec 2008: educational exhibit.
- 15. **Smits M**, Houston GC, Dippel DWJ, Wielopolski PA, Koudstaal PJ, Hunink MGM, Van der Lugt A. *Microstructural white matter damage in postconcussion syndrome after minor head injury.* European Society for Magnetic Resonance in Medicine and Biology 25<sup>th</sup> Annual Meeting, Valencia/ES, 2-4 Oct 2008: oral presentation.
- 16. **Smits M**, Dippel DWJ, Van Rijssel DA, Dekker HM, Vos PE, Kool DR, Nederkoorn PJ, Twijnstra A, Hofman PAM, Tanghe HLJ, Hunink MGM. *Cost-effectiveness of CT scanning in minor head injury: selective strategies versus scanning all patients.* European Congress of Radiology, Vienna/AT, 7-11 March 2008: oral presentation.
- 17. Bos D, Van der Lugt A, **Smits M**. *Optimisation of hypercapnia paradigms using cued breath holding at 1.5T and 3.0T.* European Congress of Radiology, Vienna/AT, 7-11 March 2008: poster presentation.

- 18. **Smits M**, Hunink MGM, Van Rijssel DA, Dekker HM, Vos PE, Kool DR, Nederkoorn PJ, Twijnstra A, Hofman PAM, Tanghe HLJ, Dippel DWJ. *Long-term outcome after complicated minor head injury*. Radiological Society of North America 93<sup>rd</sup> Scientific Assembly and Annual Meeting, Chicago, IL/US, 25-30 Nov 2007: oral presentation.
- 19. **Smits M**, Wielopolski PA, Houston GC, Tanghe HLJ, Van der Lugt A. *Advanced Magnetic Resonance (MR)* neuroimaging at 3T: What to expect? Radiological Society of North America 93<sup>rd</sup> Scientific Assembly and Annual Meeting, Chicago, IL/US, 25-30 Nov 2007: educational exhibit.
- 20. **Smits M**, Dippel DWJ, Houston GC, Wielopolski PA, Koudstaal PJ, Hunink MGM, Van der Lugt, A. *Brain activation changes of working memory in minor head injur with functional Magnetic Resonance Imaging (fMRI).* 12<sup>th</sup> Dutch Radiology Conference, Rotterdam/NL, 27-28 Sep 2007: oral presentation.
- 21. **Smits M**, Hunink MGM, Van Rijssel DA, Dekker HM, Vos PE, Kool DR, Nederkoorn PJ, Twijnstra A, Hofman PAM, Tanghe HLJ, Dippel DWJ. *Long-term outcome after complicated minor head injury*. 12<sup>th</sup> Dutch Radiology Conference, Rotterdam/NL, 27-28 Sep 2007: oral presentation.
- 22. **Smits M**, Dippel DWJ, Wielopolski PA, Houston GC, Koudstaal PJ, Hunink MGM, Van der Lugt A. *Working memory related differences in brain activation measured with functional Magnetic Resonance Imaging (fMRI) in patients 1 month after minor head injury compared to healthy controls. Joint annual meeting of the ESMRMB-ISMRM, Berlin/DE, 19-25 May 2007: oral presentation.*
- 23. **Smits M**, Dippel DWJ, Wielopolski PA, Houston GC, Koudstaal PJ, Hunink MGM, Van der Lugt A. *Brain activation changes related to working memory in minor head injury patients compared to healthy controls measured with functional Magnetic Resonance Imaging (fMRI).* European Congress of Radiology, Vienna/AT, 9-13 March 2007: oral presentation.
- 24. **Smits M**, Vernooij MW, Wielopolski PA, Houston GC, Krestin GP, Van der Lugt A. *Fiber density asymmetry of the Arcuate Fasciculus in relation to functional hemispheric language lateralization in both right and left-handed healthy subjects: a combined functional MRI and DT-tractography study. European Congress of Radiology, Vienna/AT, 9-13 March 2007: oral presentation.*
- 25. **Smits M**, Hunink MGM, Nederkoorn PJ, Dekker HM, Vos PE, Kool DR, Hofman PAM, Twijnstra A, De Haan GG, Tanghe HLJ, Dippel DWJ. *Loss of consciousness in minor head injury: "conditio sine qua non" or just a risk factor?* European Congress of Radiology, Vienna/AT, 9-13 March 2007: oral presentation.
- 26. **Smits M**, Dippel DWJ, Wielopolski PA, Koudstaal PJ, Hunink MGM, Van der Lugt A. *Brain activation changes of working memory in minor head injury patients measured with functional Magnetic Resonance Imaging (fMRI).*Radiological Society of North America 92<sup>nd</sup> Scientific Assembly and Annual Meeting, Chicago, IL/US, 26 Nov -1 Dec 2006: oral presentation.
- 27. **Smits M**, Dippel DWJ, De Haan GG, Nederkoorn PJ, Kool DR, Vos PE, Dekker HM, Twijnstra A, Hofman PAM, Tanghe HLJ, Hunink MGM. *The Dutch prediction rule for the use of Computed Tomography (CT) in patients with minor head injury.* Radiological Society of North America 92<sup>nd</sup> Scientific Assembly and Annual Meeting, Chicago, IL/US, 26 Nov-1 Dec 2006: oral presentation.
- 28. **Smits M**, Dippel DWJ, De Haan GG, Nederkoorn PJ, Kool DR, Vos PE, Dekker HM, Twijnstra A, Hofman PAM, Tanghe HLJ, Hunink MGM. *The Dutch prediction rule for the use of Computed Tomography (CT) in patients with minor head injury.* 11<sup>th</sup> Dutch Radiology Conference, Kaatsheuvel/NL, 17 Nov 2006: oral presentation.
- 29. **Smits M**, Vernooij M, Wielopolski P, Houston G, Vrooman H, Krestin G, Van der Lugt A. *Combining functional MRI and Diffusion Tensor Imaging to visualize the Corticospinal Tract: tracking the homunculus.* Human Brain Mapping 12<sup>th</sup> annual meeting, Florence/IT, 11-15 June 2006: poster presentation.
- 30. Vernooij M, **Smits M**, Wielopolski P, Houston G, Vincent A, Krestin G, Van der Lugt A. *Using Diffusion Tensor Imaging to assess language hemispheric dominance in the pre-operative assessment of brain tumor patients.* Human Brain Mapping 12<sup>th</sup> annual meeting, Florence/IT, 11-15 June 2006: poster presentation.
- 31. **Smits M**, Schraa-Tam CK, Van der Geest JN, Koudstaal PJ, Van der Lugt A. *Evaluation of working memory with functional Magnetic Resonance Imaging (fMRI): an overview of several paradigms and research and clinical applications.* European Congress of Radiology, Vienna/AT, 3-7 March 2006: educational exhibit.

- 32. **Smits M**, Dippel DWJ, De Haan GG, Nederkoorn PJ, Kool DR, Vos PE, Dekker HM, Twijnstra A, Hofman PAM, Tanghe HLJ, Hunink MGM. *National and international guidelines for Computed Tomography in minor head injury patients: a prospective multicentre validation study*. Radiological Society of North America 91<sup>st</sup> Scientific Assembly and Annual Meeting, Chicago, IL/US, 27 Nov-2 Dec 2005: oral presentation.
- 33. **Smits M**, Dippel DWJ, De Haan GG, Nederkoorn PJ, Kool DR, Vos PE, Dekker HM, Twijnstra A, Hofman PAM, Tanghe HLJ, Hunink MGM. *Computed Tomography (CT) in patients with minor head injury: external validation of two published decision rules*. Radiological Society of North America 91<sup>st</sup> Scientific Assembly and Annual Meeting, Chicago, IL/US, 27 Nov-2 Dec 2005: poster presentation.
- 34. **Smits M**, Visch-Brink E, Schraa-Tam CK, Van der Geest JN, Koudstaal PJ, Van der Lugt A. *Functional Magnetic Resonance Imaging (fMRI) of language: an overview of easy to implement language paradigms for clinical and research purposes*. Radiological Society of North America 91<sup>st</sup> Scientific Assembly and Annual Meeting, Chicago, IL/US, 27 Nov-2 Dec 2005: education exhibit.
- 35. **Smits M**, Dippel DWJ, De Haan GG, Nederkoorn PJ, Kool DR, Vos PE, Dekker HM, Twijnstra A, Hofman PAM, Tanghe HLJ, Hunink MGM. *National and international guidelines for Computed Tomography in minor head injury patients: a prospective multicentre validation study.* 10<sup>th</sup> Dutch Radiology Conference, Noordwijkerhout/NL, 29-30 Sept 2005: oral presentation.
- 36. Smits M, Dippel DWJ, De Haan GG, Nederkoorn PJ, Kool DR, Vos PE, Dekker HM, Twijnstra A, Hofman PAM, Tanghe HLJ, Hunink MGM. Computed Tomography (CT) in patients with minor head injury: external validation of two published decision rules. 10<sup>th</sup> Dutch Radiology Conference, Noordwijkerhout/NL, 29-30 Sept 2005: oral presentation.
- 37. **Smits M**, Kovacs S, De Ridder D, Peeters R, Van Hecke P, Sunaert S. *Lateralization of signal change in the auditory pathway in patients with lateralized tinnitus studied with functional Magnetic Resonance Imaging (fMRI).*Radiological Society of North America 90<sup>th</sup> Scientific Assembly and Annual Meeting, Chicago, IL/US, 27 Nov-3 Dec 2004: oral presentation.
- 38. **Smits M**, Dippel DWJ, De Haan GG, Tanghe HLJ, Hunink MGM. *Indications for computed tomography (CT) in patients with minor head injury: validation of published decision rules and individual risk factors*. Radiological Society of North America 90<sup>th</sup> Scientific Assembly and Annual Meeting, Chicago, IL/US, 27 Nov-3 Dec 2004: poster presentation.
- 39. Schraa-Tam CK, **Smits M**, Van der Lugt A, Van der Geest JN. *Functional Magnetic Resonance Imaging (fMRI) of vestibular and visual interactions in caloric vestibular stimulation.* Radiological Society of North America 90<sup>th</sup> Scientific Assembly and Annual Meeting, Chicago, IL/US, 27 Nov-3 Dec 2004: poster presentation.
- 40. **Smits M**, Dippel DWJ, De Haan GG, Tanghe HLJ, Hunink MGM. *Indications for computed tomography (CT) in patients with minor head injury: validation of published decision rules and individual risk factors*. 9<sup>th</sup> Dutch Radiology Conference, Noordwijkerhout/NL, 16-17 Sept 2004: oral presentation.
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