

CURRICULUM VITAE

Lisbeth Marner, MD, DMSc, PhD
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Date of birth: November 16th 1974

Education

- 2011 Doctoral degree at the Faculty of Health and Medical Sciences, University of Copenhagen. Communication among neurons. Quantitative measures in aging and disease. Dan Med J. 59(4):B4427 (2012). Evaluated by Professor Albert Gjedde, Professor Ramin Parcey and Jørn Hounsgaard. Defended September 16th 2011
- 2009 PhD degree at the Faculty of Health and Medical Sciences, University of Copenhagen. Molecular Brain Imaging of the Serotonin System: Reproducibility and Evaluation of PET Radiotracers. Evaluated by MD Lars Friberg, professor PhD Richard Carson, and DMSc, PhD Ian Law. Defended March 13th 2009
- 2002 Graduated in Medicine at University of Copenhagen. Authorized as a doctor

Employments:

- 2013- Department of Clinical Physiology, Nuclear Medicine and PET at University Hospital, Rigshospitalet
- 2013 6 mo. at Department of Oncology, in the Neuroteam at University Hospital, Rigshospitalet
- 2010-2012 21 mo. at Department of Clinical Physiology at Herlev Hospital
- 2010 5 mo. post doc position at Neurobiology Research Unit, University Hospital Rigshospitalet.

- 2009 Department of Clinical Physiology, Nuclear Medicine and PET at University Hospital, Rigshospitalet
- 2007 As part of my PhD, I worked 1 month at Clinical Imaging Center, GlaxoSmithKline, London supervised by PhD Roger N. Gunn.
- 2005-2008 Ph.D. study at Neurobiology Research Unit, University Hospital Rigshospitalet. Supervised by Professor DMSc Gitte Moos Knudsen and Professor DMSc Steen G. Hasselbalch.
- 2005 1 mo. at Department of Neurology at University Hospital, Rigshospitalet
- 2002-2005 Internship at Departments of Medicine and Surgery at University Hospital Glostrup, and at general practitioner, Gynther Petersen
- 1998 Scientific assistant for one year at Research Laboratory for Stereology and Neuroscience, Bartholin Institute, Copenhagen, with Professor Bente Pakkenberg as supervisor.

Other activities:

Teaching assistant at University of Copenhagen in two PhD courses

Implemented brain FDG-PET for neurodegenerative diseases at Department of Clinical Physiology at Herlev Hospital

Reviewer for *Journal of Comparative Neurology*, *European Journal of Nuclear Medicine and Molecular Imaging*, *Psychiatry Research: Neuroimaging*, *Pharmacology*, *Neuroscience Letters*, and *Human Brain Mapping*.

Presentations:

- 2010 Poster at Neuroreceptor Mapping (NRM) in Glasgow titled "Comparison of ultrafiltration and equilibrium dialysis for estimation of protein binding"
- 2009 2 oral presentations at BrainPET in Chicago titled: "Preserved Serotonergic Projections but widely reduced serotonin 2A receptors in patients and in a mouse model of Alzheimer's disease" and "The serotonin 4 receptor PET-ligand [¹¹C]SB207145: Sensitivity to occupancy by unlabeled ligand and to endogenous serotonin".
- 2008 Oral presentation at Neuroreceptor Mapping (NRM) in Pittsburg titled: "Reduced serotonin transporter binding in mesial temporal cortex in Alzheimer's disease. An ¹¹C-DASB PET study." and a poster titled: "Gender and cognitive performance: Correlations to 5-HT4 receptors in the human brain. An ¹¹C-SB207145-PET study"

- 2007 Oral presentation at EANM in Copenhagen titled: "Quantification of 11C-SB207145-PET for 5-HT₄-receptors in the human brain"
- 2007 Oral presentation at DIMI-meeting in Manchester with European collaborators in Alzheimer's dementia.
- 2007 2 oral presentations at SNM in Washington titled: "No further decrease of 5-HT_{2A} receptors in patients with mild cognitive impairment: A two-year follow-up study" and "Quantification of 11C-SB207145-PET for 5-HT₄-receptors in the human brain".
- 2007 2 posters at BrainPET in Osaka titled: "No further decrease of 5-HT_{2A} receptors in patients with mild cognitive impairment: A two-year follow-up study" for which I received Young Bursary Award (\$1000) and "Quantification of 11C-SB207145-PET for 5-HT₄-receptors in the human brain. Preliminary Results".
- 2006 Poster at Neuroreceptor Mapping Conference, Copenhagen, titled: "Longitudinal Assessment of Cerebral 5-HT_{2A} Receptors in Normal Volunteers. A [¹⁸F]-Altanserin PET study".
- 2006 Poster at Human Brain Mapping, Florence, titled: "Longitudinal Assessment of Cerebral 5-HT_{2A} Receptors in Normal Volunteers. A [¹⁸F]-Altanserin PET study".
- 2004 Poster at Niels A. Lassen Dagen at Bispebjerg Hospital, Sopenhagen titled: "Increased volume of the pigmented neurons in the locus coeruleus of schizophrenic subjects - a stereological study".
- 2001 Participation in the Niels A. Lassen Dagen speaker competition at Bispebjerg Hospital titled: "Close to 50% of the Myelinated Nerve Fibers are Lost with Age in the Human Brain".
- 2001 Oral presentation at the Annual Meeting for Scandinavian Society of Neuropathology titled: "Total Length of Myelinated Fibers in Aged and Schizophrenics".
- 1999 Oral presentation in Danish Association of Medical Women titled "The human brain losses more than 50,000 km myelinated axons in the white matter with age".
- 1999 Selected for participation in Mogens Fogh's speaker competition at the annual meeting in Danish Neurological Society with the presentation: "Humans Loose 40% of their Nerve Fibers in Brain White Matter with Age".
- 1998 Poster titled: "Total Length and Diameter of Myelinated Fibers in Brain White Matter. A Stereological Study." at Neuroscience in Los Angeles, Californien.

Grants

- 2009 *Savværksejer Jeppe Juhl og Hustru Ovita Juhls mindefond*: 3 months salary for a post doc position at Neurobiology Research Unit
- 2008 *Dagmar Marshalls fond*: 100.000 kr for the project "Molecular imaging of the brain 5-HT₄-receptors in patients with Alzheimer's disease".
- 2008 *Young Investigator Travel Award* for participation at Neuroreceptor Mapping in Pittsburg
- 2007 *Young Investigator Travel Bursary* of \$1.000 for participation at BrainPET in Osaka.
- 2004: *University Hospital, Rigshospitalet*: 3 years salary for doing my PhD at Neurobiology Research Unit
- 1998 *Danish Research Councils*: 1 year Scholar at Research Laboratory for Stereology and Neuroscience, University Hospital Bispebjerg

Courses

- 2014 Hands-on course in neuro MRI: Perfusion, Diffusion/DTI and BOLD-fMRI analysis. 2 days, Oslo, Norway
- 2012 Math, Statistics, Kinetics (MASTAKI). 8 days
- 2012 CNS. 2 days
- 2012 Lung pathophysiology. 3 days
- 2011 Ultrasound. 3 days
- 2011 Gastro-hepatological pathophysiology. 2 days
- 2010 Endokrinological pathophysiology. 3 days
- 2010 Heart pathophysiology and imaging. 3 days
- 2007 Academic Writing in English, University of Copenhagen. 18 hours
- 2006 Multivariate Statistics, Danish Technical University. 1 semester
- 2006 Basic statistics for health researchers, Department of Biostatistics. University of Copenhagen. 1 semester
- 2006 Course in Radioactive Isotopes and Ionizing Radiation at Department of Molecular Biology, University of Copenhagen
- 2006 PhD course: Basic Kinetic Modeling in Molecular Imaging at Neurobiology Research Unit. 5 days

- 2005 Multimodal Brain Imaging. Graduate School of Neuroscience. University of Copenhagen
- 2005 Basal MRI. Lars Hanson, Danish Center of Magnetic Resonance Imaging, University Hospital Hvidovre
- 2005 Course in Signal- and image Processing for biomedical researchers at Department of Computer Science, University of Copenhagen. 5 days
- 2005 Pharmacokinetic Course, Groningen, Holland. 2,5 dag
- 1998 Statistics for students of Humanbiology. University of Copenhagen. 5 days
- 1998 International Stereology Course. International Society for Stereology, Holland. 1 week
- 1997 Stereologi. Faculty of Health Sciences, Århus University. 3 days

Publications

- 1) Haahr ME, Fisher P, Holst K, Madsen K, Jensen CG, **Marner L**, Lehel S, Baaré W, Knudsen GM, Hasselbalch S. The 5-HT₄ receptor levels in hippocampus correlates inversely with memory test performance in humans. *Hum. Brain Mapp.* 34(11):3066-74 (2013)
- 2) Haahr ME, Rasmussen PM, Madsen K, **Marner L**, Ratner C, Gillings N, Baaré WF, Knudsen GM. Obesity is associated with high serotonin 4 receptor availability in the brain reward circuitry. *Neuroimage.* 61(4):884-8 (2012)
- 3) Madsen K, **Marner L**, Haahr M, Gillings N, Knudsen GM. Mass dose effects and in vivo affinity in brain PET receptor studies – a study of cerebral 5-HT₄ receptor binding with [¹¹C]SB207145. *Nucl Med Biol.* 38(8):1085-91 (2011)
- 4) Madsen K, Neumann WJ, Holst K, **Marner L**, Lehel S, Knudsen GM, Hasselbalch SG. Cerebral serotonin 4 receptors and amyloid- β in Alzheimer's disease. *J Alz Dis.* 26(3):457-66 (2011)
- 5) Madsen K, Haahr MT, **Marner L**, Keller SH, Baaré WF, Svarer C, Hasselbalch SG, Knudsen GM. Age and sex effects on 5-HT₄ receptors in the human brain: a [(11)C]SB207145 PET study. *J Cereb Blood Flow Metab.* 31(6):1575-81 (2011)
- 6) **Marner L**, Knudsen GM, Madsen K, Holm S, Baaré W, Hasselbalch SG. The reduction of baseline serotonin 2A receptors in mild cognitive impairment is stable at two-year follow-up. *J Alzheimers Dis.* 23(3):453-9 (2011)

- 7) **Marner L**, Frokjaer VG, Kalbitzer J, Lehel S, Madsen K, Baaré WF, Knudsen GM, Hasselbalch SG. Loss of serotonin 2A receptors exceeds loss of serotonergic projections in early Alzheimer's disease: a combined [(11)C]DASB and [(18)F]altanserin- PET study. *Neurobiol Aging* 33(3):479-87 (2012)
- 8) **Marner L**, Gillings N, Madsen K, Erritzoe D, Baaré WFC, Svarer C, Hasselbalch SG, Knudsen GM. Brain Imaging of Serotonin 4 Receptors in Humans with [¹¹C]SB207145-PET. *Neuroimage* 50(3):855-61 (2010)
- 9) Kalbitzer J, Erritzoe D, Holst KK, Nielsen FÅ, **Marner L**, Lehel S, Arentzen T, Jernigan TL, Knudsen GM. Seasonal changes in brain serotonin transporter binding in short 5-HTTLPR-allele carriers but not in long-allele homozygotes. *Biological Psychiatry* 67(11):1033-9 (2010)
- 10) **Marner L**, Gillings N, Comley RA, Baaré WFC, Rabiner EA, Wilson AA, Houlse S, Hasselbalch SG, Svarer C, Gunn RN, Laruelle M, Knudsen GM. Kinetic modeling of [¹¹C]SB207145 binding to 5-HT₄ receptors in the human brain in vivo. *Journal of Nuclear Medicine*. 50(6):900-908 (2009)
- 11) Erritzoe D, Frokjaer V, Haugbol S, **Marner L**, Svarer C, Holst K, Baaré W, Rasmussen P, Madsen J, Paulson O. Brain serotonin 2A binding: Relations to body mass index, tobacco and alcohol use. *Neuroimage*. 46(1):23-30 (2009)
- 12) **Marner L**, Knudsen GM, Haugbøl S, Holm S, Baaré W, Hasselbalch SG. Longitudinal assessment of cerebral 5-HT_{2A} receptors in healthy elderly volunteers: An [¹⁸F]-altanserin PET study. *European Journal of Nuclear Medicine and Molecular Imaging*. 36(2):287-93 (2009)
- 13) Kornum BR, Lind NM, Gillings N, **Marner L**, Andersen F, Knudsen GM. Evaluation of the novel 5-HT₄ Receptor PET ligand [¹¹C]SB207145 in the Göttingen minipig. *Journal of Cerebral Blood Flow and Metabolism*. 29(1):186-96 (2009)
- 14) Jørgensen AM, **Marner L**, Pakkenberg B.: No Change in total length of white matter fibers in Alzheimer's disease. *Neuroscience* 157(4):878-83 (2008)
- 15) **Marner L**, Søbørg C, Pakkenberg B: Increased Volume of the Pigmented Neurons in the Locus Coeruleus of Schizophrenics – a stereological study. *Journal of Psychiatric Research* 39(4):337-345 (2005)
- 16) Pedersen KM, **Marner L**, Pakkenberg H, Pakkenberg, B. No Global Loss of Neocortical Neurons in Parkinson's Disease – a

quantitative stereological study. *Movement Disorders* 20(2):164-71 (2005)

- 17) **Marner L**, Nyengaard JR, Tang Y, Pakkenberg B: Marked Loss of Myelinated Nerve Fibers in the Human Brain with Age. *The Journal of Comparative Neurology* 462:144-152 (2003)
- 18) **Marner L**, Pakkenberg B: Total Length of Nerve Fibers in Prefrontal and Global White Matter of Chronic Schizophrenia. *Journal of Psychiatric Research* 37:539-547 (2003)
- 19) Pakkenberg B, Pelvig D, **Marner L**, Bundgaard MJ, Gundersen HJG, Nyengaard JR, Regeur L: Aging and the Human Neocortex. *Experimental Gerontology* 38(1-2):95-99 (2003)