

Gitte Moos Knudsen, Professor, Chief Neurologist, DMSc (dr.med.), Neurobiology Res.Unit, Rigshospitalet and University of Copenhagen, Blegdamsvej 9, DK-2100 Copenhagen, Denmark.

Education and academic degrees:

MD from University of Copenhagen 24.1.1984. Board certified user of radioisotopes 1986. FMGEMS exam (US) 1989. Board certified in neurology 1994. DMSc (dr.med.) from Univ. Copenhagen 16.12.1994.

Previous appointments:

My clinical education has predominantly taken place at Rigshospitalet and has been interspersed by a three years appointment as research fellow (1986-1989) at the Dept. of Neurology, and by maternal leave in 1989, 1992, and 1995. Appointed as research professor in Neurobiology and chief neurologist in 1999. Professor of Neurology at University of Copenhagen 2005-2006 and of Clinical Neurobiology from 2004.

Visiting scientist at NIH and at Stony Brook, USA (1985-90), at Institute of Physiology, Bonn, Germany (1988-89), and at MGH Harvard, Boston (2011-12).

Present appointments:

Chief neurologist at Dept Neurology, Rigshospitalet and chairman at the Neurobiology Research Unit, Rigshospitalet, and Director of the Lundbeck Foundation Center for Integrated Molecular Brain Imaging (Cimbi) and of Center for Experimental Medicine Neuropharmacology (NeuroPharm). Professor in Clinical Neurobiology at the University of Copenhagen.

Positions of trust and research assessments:

Member of the Board of Directors 1995-1999 and Scientific Secretary 2001-2005 of the International Society of Cerebral Blood Flow and Metabolism; of the Danish Society for Neuroscience from 1997 (President 2010-12); of the Scientific Ethics Committee for Copenhagen and Frederiksberg 1998-2002; of the Research Council of the Medical Faculty at the University of Copenhagen from 1999-2005; Chairman for the steering group for research laboratories at Rigshospitalet from 1999, Scientific Advisory Board Member, Health Science Faculty, University of Lund 2007-10.

Member of the EU commissions Expert Panel for evaluation of research applications, Brussels, in 1999, 2000, 2005, and 2013 and for the Norwegian Research Council 2006-7, Danish Multiple Sclerosis Foundation Research Committee 2007-9, and Swedish Research Council and VINNOVA 2005-2008 and 2015, and Kristian Jebsen Foundation since 2015. Member of the program committee of the Danish Council for Strategic Research 2009-2014. Executive Committee of ECNP from 2010, currently Vice-President.

Examiner at PhD and DMSc theses in Denmark, Canada, Sweden, Australia, and Finland.

Editorial Board member on Journal Cerebral Blood Flow Metabolism; Biology of Mood and Anxiety Disorders, Current Radiopharmaceuticals and Membrane Transport and Signaling. Field editor for the International Journal of Neuropsychopharmacology (2013-). Organizer of international courses for postgraduates and invited speaker at international meetings about 5 times yearly.

Research focus:

I am a translational neurobiologist and clinical neurologist with interest in advanced methodological developments that I subsequently apply in my research to address pertinent neurobiological and clinical issues. My scientific interest is the neurobiology of the human brain

with particular focus on multimodality neuroimaging of neurotransmission in healthy individuals as well as in neurological or psychiatric disorders.

Leadership:

Leader of Neurobiology Research Unit (NRU) at Rigshospitalet since 2004 (www.nru.dk). NRU encompasses around 50 staff members, publishes around 35 peer-reviewed papers per year and has an annual budget of roughly 3.5 mio €.

Director of the Lundbeck Foundation Center for Integrated Molecular Brain Imaging (Cimbi) since 2006; based on a 11 mio € grant donation from the Lundbeck Foundation to establish a neuroscience center (www.cimbi.org). Since 2015 director of Center for Experimental Medicine Neuropharmacology (www.NeuroPharm.eu), financed by a center grant from the InnovationFond.

Mentoring:

Since 1999 I have supervised a total of 19 PhD-students (hereof 10 females) who have defended their PhD degrees. After earning their PhD degree they were recruited as post docs by different foreign institutions: Childrens Hospital Harvard Medical School (Cecilie Licht), Stanford University (Birgitte Kornum; Mikael Palner), Imperial College London (David Erritzøe), and Charité Berlin (Jan Kalbitzer). Of the remaining, seven became either senior researchers or post docs in Danish academic institutions, three went on to clinical training for specialization, and two became employed in drug companies in Denmark and Sweden. My laboratory supervises about 3-5 national and international Master and PhD students every year.

International relations:

European collaborations within the EUREKA Program (1998-2000); the COST EU Program (1999-2000). Coordinator of EU 5th Framework “Neuroreceptor mapping in patients with mild cognitive impairment”, 2001-6. Partner within the EU 6th and 7th Framework programs DiMI (2005-10), Euripides (2007-12), and InMind (2012-).

US collaborations: Affiliated partner in the International Consortium for Brain Mapping Visiting professor at the Martinos Center, Massachusetts General Hospital and Harvard University, Boston, USA, 2011-12. Several joint research projects were established during that period, with exchange of PhD-students and senior scientists from both sides, and so far two joint grants.

Honours:

Member of the Royal Danish Academy of Sciences and Letters since 2004.

Synthelabo Recherche Award 1994 of the Société de Circulation et Métabolism du Cerveau, France; Anne Bochart Prize 1999 awarded by the Medical Society in Copenhagen; William Ottesen & Wife’s Foundation 2008, Denmark; Monrad-Krohn Prize 2010, Norway; Niels Lassen Prize 2011; The Carlsberg Foundation Researcher Award for Sciences, 2014.

Publications:

Published more than 300 Medline indexed scientific papers and reviews. No. citations >9000. H-index: 49 (GoogleScholar).

Ten selected recent publications

Kalbitzer J, Erritzoe D, Holst KK, Nielsen FA, Marner L, Lehel S, Arentzen T, Jernigan TL, **Knudsen GM**. Seasonal changes in brain serotonin transporter binding in short serotonin transporter linked polymorphic region-allele carriers but not in long-allele homozygotes. *Biol Psychiatry*. 2010;67:1033-9.

Erritzoe D, Frokjaer VG, Holst KK, Christoffersen M, Johansen SS, Svarer C, Madsen J, Rasmussen PM, Ramsøy T, Jernigan TL, **Knudsen GM**. In Vivo Imaging of Cerebral Serotonin Transporter and Serotonin_{2A} Receptor Binding in 3,4-Methylenedioxymethamphetamine (MDMA or "Ecstasy") and Hallucinogen Users. *Arch Gen Psychiatry*. 2011;68:562-76.

Sander CY, Hooker JM, Catana C, Normandin MD, Alpert NM, **Knudsen GM**, Vanduffel W, Rosen BR, Mandeville JB. Neurovascular coupling to D₂/D₃ receptor occupancy using simultaneous PET/fMRI. *Proc Natl Acad Sci U S A*. 2013;110:11169-74.

Hansen HD, Herth MM, Ettrup A, Andersen VL, Lehel S, Dyssegaard A, Kristensen JL, **Knudsen GM**. Radiosynthesis and In Vivo Evaluation of Novel Radioligands for PET Imaging of Cerebral 5-HT₇ Receptors. *J Nucl Med*. 2014;55:640-6

Fisher PM, Madsen MK, Mc Mahon B, Holst KK, Andersen SB, Laursen HR, Hasholt LF, Siebner HR, **Knudsen GM**. Three-week bright-light intervention has dose-related effects on threat-related corticolimbic reactivity and functional coupling. *Biol Psych*. 2014 Aug 15;76(4):332-9

Haahr ME, Fisher PM, Jensen CG, Frokjaer VG, Mahon BM, Madsen K, Baaré WF, Lehel S, Norremolle A, Rabiner EA, **Knudsen GM**. Central 5-HT₄ receptor binding as biomarker of serotonergic tone in humans: a [¹¹C]SB207145 PET study. *Mol Psychiatry*. 2014;19:427-32.

Fisher PM, Haahr ME, Jensen CG, Frokjaer VG, Siebner HR, **Knudsen GM**. Fluctuations in [¹¹C]SB207145 PET binding associated with change in threat-related amygdala reactivity in humans. *Neuropsychopharmacology*. 2015;40:1510-8.

Haahr ME, Hansen DL, Fisher PM, Svarer C, Stenbæk D, Madsen K, Madsen J, Holst JJ, Baaré WF, Hojgaard L, Almdahl T, **Knudsen GM**. Central 5-HT neurotransmission modulates weight loss following gastric bypass surgery in obese individuals. *J Neurosci*. 2015;35:5884-9.

Knudsen GM, Jensen PS, Erritzoe D, Baaré WFC, Ettrup A, Fisher PM, Gillings N, Hansen HD, Hansen LK, Hasselbalch SG, Henningsson S, Herth MM, Holst KK, Iversen P, Kessing LV, Macoveanu J, Madsen KS, Mortensen EL, Nielsen FÅ, Paulson OB, Siebner HR, Stenbæk DS, Svarer C, Jernigan TL, Strother SC, Frokjaer VG. The Center for Integrated Molecular Brain Imaging (Cimbi) Database. *NeuroImage*, 2015 [Epub ahead of print].

Frokjaer VG, Pinborg A, Holst KK, Overgaard A, Henningsson S, Heede M, Larsen EC, Jensen PS, Agn M, Nielsen AP, Stenbæk DS, da Cunha-Bang S, Lehel S, Siebner HR, Mikkelsen JD, Svarer C, **Knudsen GM**. Role of Serotonin Transporter Changes in Depressive Responses to Sex-Steroid Hormone Manipulation: A Positron Emission Tomography Study. *Biol Psychiatry*. 2015;78:534-43.