

## Short CV – Volker A. Coenen, M.D.

Department of Stereotactic and Functional Neurosurgery  
Freiburg University, Germany



- 1998 Graduation from medical school at the University of Technology (RWTH) Aachen, Germany in.
- 1999- 2005 Resident neurosurgeon, Department of Neurosurgery, University of Technology (RWTH) Aachen, Germany
- 2005 Consultant Neurosurgeon
- 2007 - 2008 Fellowship in Functional Neurosurgery at the University of British Columbia, Vancouver, Canada.
- 2008 – 2012 Professor (W2) and head of the Division of Stereotaxy and MR-based OR techniques at Bonn University, Germany.
- Since 2013 Full Professor (W3) and Department head of the Department of Stereotactic and Functional Neurosurgery at Freiburg University, Germany

The main interest of Dr. Coenen's scientific group is the application of the deep brain stimulation (DBS) technology for various indications (Movement disorders, predom. Parkinson's disease, dystonia, tremor and epilepsies). One of his main focuses is the treatment refractory depression (MD). He researches the application of neuromodulation of the reward system to treat psychiatric diseases. In the laboratory his group works towards the identification of the depression circuitry in the rat and in the human primate in a translational approach. A main focus is the anatomical and functional description of the ventral tegmental area (VTA). His research is geared towards the development of new and more efficacious target regions for DBS using the DTI technology an application that he has pioneered. Dr. Coenen has published more than 130 peer reviewed articles.

Keywords: neuroanatomy, diffusion tensor imaging (DTI), deep brain stimulation (DBS), medial forebrain bundle (mfb, rodent; MFB, human), reward circuitry, subthalamic nuclei, networks, subcortical projection pathways, affect, emotion

Five most important publications:

- 1.) Coenen, V.A., Schlaepfer, T.E., Sajonz, B., Döbrössy, M., Kaller, C.P., Urbach, H., Reisert, M., 2020. Tractographic description of major subcortical projection pathways passing the anterior limb of the internal capsule. Corticopetal organization of networks relevant for psychiatric disorders. *NeuroImage: Clinical* 25, 102165. doi:10.1016/j.nicl.2020.102165
- 2.) Coenen, V.A., Sajonz, B., Prokop, T., Reisert, M., Piroth, T., Urbach, H., Jenkner, C., Reinacher, P.C., 2020. The dentato-rubro-thalamic tract as the potential common deep brain stimulation target for tremor of various origin: an observational case series. *Acta Neurochir* 18, 130–14. doi:10.1007/s00701-020-04248-2
- 3.) Coenen, V.A., Bewernick, B.H., Kayser, S., Kilian, H., Boström, J., Greschus, S., Hurlemann, R., Klein, M.E., Spanier, S., Sajonz, B., Urbach, H., Schlaepfer, T.E., 2019. Superolateral medial forebrain bundle deep brain stimulation in major depression: a gateway trial. *Neuropsychopharmacology* 26, 587. doi:10.1038/s41386-019-0369-9
- 4.) Coenen, V.A., Schlaepfer, T.E., Maedler, B., Panksepp, J., 2011. Cross-species affective functions of the medial forebrain bundle-implications for the treatment of affective pain and depression in humans. *Neuroscience and Biobehavioral Reviews* 35, 1971–1981. doi:10.1016/j.neubiorev.2010.12.009
- 5.) Schlaepfer, T.E., Bewernick, B.H., Kayser, S., Mädler, B., Coenen, V.A., 2013. Rapid effects of deep brain stimulation for treatment-resistant major depression. *Biol Psychiatry* 73, 1204–1212. doi:10.1016/j.biopsych.2013.01.034

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