Curriculum vitae

Univ.-Prof. Dr. med. habil. Christian Grefkes, MBA
Arbeitsgruppenleiter „Rehabilitation kognitiver Störungen“
Professor für Schlaganfall und Neurorehabilitation
Oberarzt der Klinik und Poliklinik für Neurologie, Uniklinik Köln

Expertise

- Humanmedizin (Schwerpunkt: Neurologie)
- Schlaganfall, Morbus Parkinson
- Funktionelle Magnetresonanztomographie (fMRT; SPM, DCM)
- Sensomotorisches System
- Bewegungskinematik
- Neuropharmakologie
- Transkranielle Magnetstimulation

Werdegang

- 2013
  Ernennung zum Universitätsprofessor (W2) für Schlaganfall und Neurorehabilitation, Medizinische Fakultät, Universität zu Köln

- 2011
  Habilitation “Das sensomotorische System des Menschen: Funktionelle Anatomie und nicht-invasive Neuromodulation bei Gesunden und Schlaganfall-Patienten”, Medizinische Fakultät, Universität zu Köln, 14.04.2011 (Experimentelle Medizin); 02.10.2012 (Neurologie)

- 2005
  Promotion (summa cum laude) zum “Dr. med.” zum

Thema “Multimodale Kartierung der Area 2: Synthese von Struktur und Funktion im Gehirn des Menschen” Institut für Hirnforschung, Uni Düsseldorf (Prof. Dr. Karl Zilles)

- 2004
  Ärztliche Approbation

- 1998–2004
  Medizinstudium an der Universität Düsseldorf, University of Sydney (Australien) und University College London (UK)

- 1997–1998
  Chemiestudium (Diplom), Ruprecht-Karls-Universität Heidelberg

- 1996
  Abitur am Bischöfl. Albertus-Magnus-Gymnasium Viersen-Dülken, Viersen

Positionen

- seit 2013
  Oberarzt, Neurologische Klinik (Direktor: Prof. Dr. med. G.R. Fink), Klinikum der Universität zu Köln

- seit 2012
  Facharzt für Neurologie

- 2007–2014
  Gruppenleiter der Forschungsgruppe “Neuromodulation & Neurorehabilitation”, Max-Planck-Institut für neurologische Forschung (Direktor Prof. Dr. med. J. Brüning; Direktor emeritus Prof. Dr. med. D. Yves von Cramon), Köln

- 2012
  Visiting Research Fellow am Sobell Department of Motor

Neuroscience, Queen Square 33, London (Prof. J. Rothwell)

- 2007–2012
  Assistenzarzt, Neurologische Klinik (Direktor: Prof. Dr. med. G.R. Fink), Klinikum der Universität zu Köln

- 2010–2011
  Assistenzarzt, Psychiatrische Klinik (Direktor: Prof. Dr. med. J. Klosterkötter), Klinikum der Universität zu Köln

- 2005–2007
  Assistenzarzt, Neurologische Klinik (Direktor: Prof. Dr. med. J. Noth), Universitätsklinikum der RWTH Aachen, mit Forschungsaufenthalt in 2006 im Institut für Neurowissenschaften und Medizin des Forschungszentrums Jülich (INM3 – Kognitive Neurologie, Direktor: Prof. Dr. med. G.R. Fink)

- 2001–2004
  Studentische Hilfskraft (AG Kognitive Neurologie, Prof. Dr. G.R. Fink) am Institut für Medizin, Forschungszentrum Jülich

Mitgliedschaften in Fachgesellschaften

- Organization for Human Brain Mapping (OHBM), Program Committee Member 2013–2016
- Deutsche Gesellschaft für Neurologie (DGN)
- Deutsche Gesellschaft für Klinische Neurophysiologie u. fkt. Bildgebung (DGKN)

Stipendien und Preise

- Symposiumspreis der Felgenhauer-Stiftung, Deutsche

Gesellschaft für Neurologie (2013)

- Habilitationspreis der Medizinischen Fakultät der Universität zu Köln (2012)
- Deutschland – Land der Ideen, “Ausgewählter Ort” zum Thema “Frührehabilitation von Schlaganfallpatienten durch Hirnstimulation” 2012
- Förderpreis der Deutschen Gesellschaft für Neurotraumatologie und Klinische Neurorehabilitation 2011
- Young-Investigator-Award des Kompetenznetzwerks Schlaganfall (2011)
- Niels-A.-Lassen-Preis der Deutschen Gesellschaft für Klin. Neurophysiologie (2011)
- Posterpreis der Deutschen Gesellschaft für Klin. Neurophysiologie (2009)
- Posterpreis der Deutschen Gesellschaft für Neurologie (2007)
- Posterpreis der Nordrhein-Westf. Akademie der Wissenschaften Düsseldorf (2005)
- Stipendiat der Studienstiftung des Deutschen Volkes (2000-2004)
- Stipendiat des Neurograduiertenkollegs der Universität Düsseldorf (2000-2002)
- Travel Awards der Organization for Human Brain Mapping (OHBM) 2000, 2002 & 2007

Publikationen (peer-reviewed)

Kumulativer Impact Factor:	418,2
Mittlerer Impact Factor:	6,1
Median Impact Factor :	6,3
Hirsch-Index:	25
Summe Anzahl der Zitate:	3348
Durchschnittliche Zitate pro Item:	58,7

Stand: Januar 2014 Quelle: ISI Web of Science

- Grefkes C, Fink GR. Connectivity-based approaches in stroke and recovery of function. Lancet Neurol 2014 (in press) (Impact Factor 23.9)
- Volz LJ, Sarfeld AS, Diekhoff S, Rehme AK, Pool EM, Eickhoff SB, Fink GR, Grefkes C. Motor cortex excitability and connectivity in chronic stroke: a multimodal model of functional reorganization. Brain Struct Funct. 2014 Jan. DOI 10.1007/s00429-013-0702-8 [Epub ahead of print] (Impact Factor 7.8)
- Hoffstaedter F, Grefkes C, Roski C, Caspers S, Zilles K, Eickhoff SB. Age-related decrease of functional connectivity additional to gray matter atrophy in a network for movement initiation. Brain Struct Funct. 2014 Jan 8. DOI: 10.1007/s00429-013-0696-2 [Epub ahead of print] (Impact Factor 7.8)
- Hermann MM, van Asten F, Muether PS, Smailhodzic D, Lichtner P, Hoyng CB, Kirchhof B, Grefkes C, den Hollander AI, Fauser S. Polymorphisms in Vascular Endothelial Growth Factor Receptor 2 Are Associated with Better Response Rates to Ranibizumab Treatment in Age-related Macular Degeneration. Ophthalmology. 2013 Dec 20. pii: S0161-6420(13)01056-7. doi: 10.1016/j.ophtha.2013.10.047. [Epub ahead of print] (Impact Factor 5.6)
- Binder E, Hagelweide K, Wang LE, Kornysheva K, Grefkes C, Fink GR, Schubotz RI. Sensory-guided motor tasks benefit from mental training based on serial prediction. Neuropsychologia 2014 (in press) (Impact Factor 3.5)
- Volz L, Grefkes C. Neurophysiological and neuroimaging predictors of functional recovery after stroke. Klin Neurophysiol. 2013; 44: 238-46.(Impact Factor 0.3)
- Cieslik EC, Müller VI, Kellermann TS, Grefkes C, Halfter S, Eickhoff SB. Shifted neuronal balance during stimulus-response integration in schizophrenia – an fMRI study. Brain Struct Funct 2013 (in press) (Impact Factor 7.8)
- Langner R, Sternkopf M, Kellermann T, Grefkes C, Florian K, Schneider F, Zilles K, Eickhoff SB. Translating working

memory into action: Behavioural and neural evidence for using motor representations in encoding visuo-spatial sequences. Human Brain Mapp 2013 (In press) (Impact Factor 6.9)

- Hoffstaedter F, Grefkes C, Caspers S, Roski C, Palomero-Gallagher N, Laird AR, Fox PT and Eickhoff SB. The role of anterior midcingulate cortex in cognitive motor control – evidence from functional connectivity analyses. Human Brain Mapp 2013 Doi:10.1002/hbm.22363 (Impact Factor 6.9)
- Pool EM, Rehme AK, Fink GR, Eickhoff SB, Grefkes C. Network dynamics engaged in the modulation of motor behavior in healthy subjects. Neuroimage 2013: 82:68-76. (Impact Factor 6.3)
- Grefkes C, Ward NS. Cortical reorganization after stroke: How much and how functional? The Neuroscientist 2013 (in press) (Impact Factor 4.6)
- Cárdenas-Morales L, Volz LJ, Michely J, Rehme AK, Pool EM, Nettekoven C, Eickhoff SB, Fink GR, Grefkes C. Network Connectivity and Individual Responses to Brain Stimulation in the Human Motor System. Cereb Cortex. 2013 Feb 8. [Epub ahead of print] (Impact Factor 6.5)
- Rehme AK, Eickhoff SB, Grefkes C. State-dependent differences between functional and effective connectivity of the human cortical motor system. Neuroimage. 2013;67:237-46. (Impact Factor 5.9)
- Rehme AK, Grefkes C. Cerebral network disorders after stroke: Evidence from imaging-based connectivity analyses of active and resting brain states in humans. J Physiol. 2013 Jan 1;591(Pt 1):17-31 (Impact Factor 4.7)
- Weiss C, Nettekoven C; Rehme AK, Neuschmelting V, Eisenbeis A, Goldbrunner R, Grefkes, C. Mapping the hand, foot and face representations in primary motor cortex – Retest reliability of neuronavigated TMS versus functional MRI. NeuroImage 2013 Feb:66: 531-42 (Impact Factor 5.9)
- Wang LE, Tittgemeyer M, Imperati D, Diekhoff D, Ameli M,

Fink GR, Grefkes C. Degeneration of corpus callosum and recovery of motor function after stroke: A multimodal magnetic resonance imaging study. Hum Brain Mapping 2012 Dec;33(12):2941-56. (Impact Factor 5.9)

- Grefkes C, Fink GR. Stroke-induced Disturbed Motor Network Connectivity and its Non-invasive Neuromodulation. Curr Opin Neurol. 2012 Dec;25(6):670-5. (Impact Factor: 4.9)
- Michely J, Barbe MT, Hoffstaedter F, Timmermann L, Eickhoff SB, Fink GR, Grefkes C. Differential effects of dopaminergic medication on basic motor performance and executive functions in Parkinson's disease. Neuropsychologia Aug;50(10):2506-14. (Impact Factor 3.6)
- Hasan A, Wobrock T, Grefkes C, Labusga M, Levold K, Schneider-Axmann T, Falkai P, Müller H, Klosterkötter J, Bechdolf A. Deficient inhibitory cortical networks in antipsychotic-naive subjects at-risk of developing first-episode psychosis and first-episode schizophrenia patients: a cross-sectional study. Biol Psychiatry 2012 Nov;72(9):744-51 (Impact Factor 8.3)
- Hoffstaedter F, Grefkes C, Zilles K, Eickhoff SB. The 'What' and 'When' of Self-initiated Movements. Cereb Cortex 2012 Mar 13. [Epub ahead of print] (Impact Factor 6.5)
- Hoffstaedter F, Sarlon J, Grefkes C, Eickhoff SB. Internally vs. externally triggered movements in patients with major depression. Behav Brain Res Behav Brain Res. 2012 Mar 1;228(1):125-32. Epub 2011 Nov 28. (Impact Factor 3.4)
- Rehme AK, Eickhoff SB, Rottschy C, Fink GR, Grefkes C. Activation likelihood estimation meta-analysis of motor-related neural activity after stroke. Neuroimage. 2012 Feb 1;59(3):2771-82. Epub 2011 Oct 17. (Impact Factor 5.9)
- Sarfeld AS, Diekhoff S, Wang LE, Liuzzi G, Uludag K, Eickhoff SB, Fink GR, Grefkes C. Convergence of human brain mapping tools: Neuronavigated TMS parameters and

fMRI activity in the hand motor area. Hum Brain Mapping 2012 May;33(5):1107-23. doi: 10.1002/hbm.21272. (Impact Factor 5.9)

- Grefkes C. Network Disorders after Stroke: New Aspects from Functional Magnetic Resonance Imaging. Klin Neurophysiol 2011; 42(03): 177-182 (Impact Factor 0.1)
- Cieslik EC, Zilles K, Grefkes C, Eickhoff SB. Dynamic interactions in the fronto-parietal network during a manual stimulus-response compatibility task. Neuroimage. 2011 Oct 1; 58(3):860-9. Epub 2011 Jun 25. (Impact Factor 5.9)
- Eickhoff SB, Grefkes C. Approaches for the integrated analysis of structure, function and connectivity of the human brain. Clin EEG Neurosci. 2011 Apr;42(2):107-21. (Impact Factor 1.7)
- Grefkes C, Fink GR. Reorganization of cerebral networks after stroke: New insights from neuroimaging using connectivity approaches. Brain. 2011 May;134(Pt 5):1264-76. Epub 2011 Mar 16. (Impact Factor 9.5)
- Rehme AK, Eickhoff SB, Wang LE, Fink GR, Grefkes C. Dynamic causal modeling of cortical activity from the acute to the chronic stage after stroke. Neuroimage. 2011b Apr 1;55(3):1147-58. (Impact Factor 5.9)
- Wang LE, Fink GR, Diekhoff S, Rehme AK, Eickhoff SB, Grefkes C. Noradrenergic enhancement improves motor network connectivity in stroke patients. Ann Neurol. 2011 Feb;69(2):375-88 (Impact Factor 11.1)
- Rehme AK, Fink GR, von Cramon DY, Grefkes C. The role of the contralesional motor cortex for motor recovery in the early days after stroke assessed with longitudinal fMRI. Cereb Cortex. 2011a Apr;21(4):756-68. (Impact Factor 6.5)
- Diekhoff S, Uludag K , Sparing R , Tittgemeyer M , Cavusoglu M , von Cramon DY, Grefkes C. Functional localization in the human brain: Gradient-Echo, Spin-Echo, and Arterial Spin-Labeling fMRI compared with neuronavigated transcranial magnetic stimulation. Hum

Brain Mapp. 2011 Mar;32(3):341-57. (Impact Factor 5.9)

- Grefkes C, Nowak DA, Wang LE, Dafotakis M, Eickhoff SB, Fink GR. Modulating cortical connectivity in stroke patients by rTMS assessed with fMRI and dynamic causal modelling. Neuroimage 2010a, 50: 234-243 (Impact Factor 5.9)
- Grefkes C, Fink GR. Functional Neuroimaging and Neuromodulation: Effects of Transcranial Magnetic Stimulation on Cortical Networks in Healthy Subjects and Patients. Klin Neurophysiol. 2009; 40: 1-9 (Impact Factor 0.1)
- Grefkes C, Wang LE, Eickhoff SB, Fink GR. Noradrenergic modulation of cortical networks engaged in visuomotor processing. Cereb Cortex. 2010b Apr;20(4):783-97. (Impact Factor: 6.5)
- Ameli M, Grefkes C, Kemper F, Riegg F, Rehme AK, Karbe H, Fink GR, Nowak DA. Differential effects of high-frequency rTMS over ipsilesional primary motor cortex in cortical and subcortical MCA stroke. Ann Neurol. 2009 Sep;66(3):298-309. (Impact Factor 11.1)
- Jakobs O, Wang LE; Dafotakis M, Grefkes C, Zilles K, Eickhoff SB. Effects of timing and movement uncertainty implicate the temporo-parietal junction in the prediction of forthcoming motor actions. Neuroimage 2009 Aug 15;47(2):667-77. (Impact Factor 5.9)
- Nowak DA, Grefkes C, Ameli M, Fink GR. Interhemispheric competition after stroke: Brain stimulation to enhance recovery of function of the affected hand. Neurorehabil Neural Repair 2009 Sep;23(7):641-56. Review. (Impact Factor 4.5)
- Wang LE, Fink GR, Dafotakis M, Grefkes C. Noradrenergic stimulation and motor performance: Differential effects of reboxetine on movement kinematics and visuomotor abilities in healthy human subjects. Neuropsychologia 2009, 47(5):1302-1312 (Impact Factor 3.6)
- Eickhoff SB, Laird AR, Grefkes C, Wang LE, Zilles K, Fox PT. Coordinate-based activation likelihood estimation meta-

analysis of neuroimaging data: A random-effects approach based on empirical estimates of spatial uncertainty. Hum Brain Mapp. 2009 Sep;30(9):2907-26. (Impact Factor 5.9)

- Eickhoff SB, Dafotakis M, Grefkes C, Stöcker T, Shah NJ, Schnitzler A, Zilles K, Siebler M. fMRI reveals cognitive and emotional processing in a long-term comatose patient. Exp Neurol. 2008 Dec;214(2):240-6. (Impact Factor 4.7)
- Nowak DA, Grefkes C, Dafotakis M, Küst J, Karbe H, Fink GR. Effects of low-frequency rTMS over contralesional M1 on movement kinematics and neural activity in subcortical stroke. Arch Neurol (2008) Jun;65(6):741-7 (Impact Factor 7.6)
- Dafotakis M, Grefkes C, Wang L, Fink GR, Nowak DA. The effects of 1 Hz rTMS over the hand area of M1 on movement kinematics of the ipsilateral hand. J Neural Transm. 2008 Sep;115(9):1269-74 (Impact Factor 2.7)
- Nowak DA, Grefkes C, Fink GR. [Modern neurophysiological strategies in the rehabilitation of impaired hand function following stroke.] Fortschr Neurol Psyc. 2008 Jun;76(6):354-60. Review. (Impact Factor 0.7)
- Eickhoff SB, Dafotakis M, Grefkes C, Shah NJ, Zilles K, Piza-Katzer H. Central adaptation following heterotopic hand replantation probed by fMRI and effective connectivity analysis. Exp Neurol. 2008 Apr 6. Jul;212(1):132-44. (Impact Factor 4.7)
- Buelte D, Meister IG, Staedtgen M, Dambeck N, Sparing R, Grefkes C, Boroojerdi B. The role of the anterior intraparietal sulcus in crossmodal processing of object features in humans: An rTMS study. Brain Res. 2008 Jun 27;1217:110-8. (Impact Factor 2.7)
- Grefkes C, Eickhoff SB, Nowak DA, Dafotakis M, Fink GR. Dynamic intra- and interhemispheric interactions during unilateral and bilateral hand movements assessed with fMRI and DCM. Neuroimage 2008 Jul 15;41(4):1382-94 (Impact Factor 5.9)

- Dafotakis M, Grefkes C, Eickhoff SB, Karbe H, Fink GR, Nowak DA. Effects of rTMS on grip force control following subcortical stroke. Exp Neurol. 2008 Jun;211(2):407-12. Epub 2008 Mar 6. (Impact Factor 3.9)
- Eickhoff SB, Grefkes C, Fink GR, Zilles K. Functional Lateralization of Face, Hand, and Trunk Representation in Anatomically Defined Human Somatosensory Areas. Cereb Cortex. 2008 Dec;18(12):2820-30. (Impact Factor 6.9)
- Grefkes C, Nowak DA, Eickhoff SB, Dafotakis M, Küst J, Karbe H, Fink GR. Cortical connectivity after subcortical stroke assessed with functional magnetic resonance imaging. Ann Neurol. 2008 Feb;63(2):236-46. (Impact Factor 9.3)
- Nowak DA, Grefkes C, Dafotakis M, Karbe H, Fink GR. Dexterity is impaired at both hands following unilateral subcortical middle cerebral artery stroke. Eur J Neurosci (2007) 25: 696-703 (Impact Factor 3.4)
- Eickhoff SB, Grefkes C, Zilles K, Fink GR. The somatotopic organization of cytoarchitectonic areas on the human parietal operculum. Cereb. Cortex (2007) 17: 1800-1811 (Impact Factor 6.9)
- Scheperjans F, Palomero-Gallagher N, Grefkes C, Schleicher A, Zilles K. Transmitter receptors reveal segregation between areas in the human superior parietal lobe: relations between visual and somatosensory regions. Neuroimage (2005), Jul 27. (Impact Factor 5.7)
- Grefkes C, Fink GR. The functional organization of the intraparietal sulcus in humans and monkeys.J Anat (2005) 207: 3-17. (Impact Factor 2.1)
- Eickhoff S, Stephan KE, Mohlberg H, Grefkes C, Fink GR, Amunts K, Zilles K. A new SPM toolbox for combining probabilistic cytoarchitectonic maps and functional imaging data. Neuroimage (2005) 25: 1325-1335. (Impact Factor 5.7)
- Scheperjans F, Grefkes C, Palomero-Gallagher N, Schleicher

A, Zilles K. Subdivisions of human parietal area 5 revealed by quantitative receptor autoradiography: A parietal region between motor, somatosensory, and cingulate cortical areas. Neuroimage (2005) 25: 975-92 (Impact Factor 5.7)

- Naito E, Roland PE, Grefkes C, Choi HJ, Eickhoff S, Geyer S, Zilles K, Ehrsson HH. Dominance of the right hemisphere and role of area 2 in human kinesthesia. J. Neurophysiol. (2005) 93: 1020-34, Epub 2004. (Impact Factor 3.5)
- Grefkes C, Ritzl A, Zilles K, Fink GR. Human medial intraparietal cortex subserves visuomotor coordinate transformation. Neuroimage (2004) 23: 1494-1506. (Impact Factor 5.7)
- Young JP, Herath P, Eickhoff S, Grefkes C, Choi HJ, Zilles K, Roland PE. Somatotopy and attentional modulation of the human parietal and opercular regions. J Neurosci. (2004) 24: 5391-5399. (Impact Factor 7.1)
- Young JP, Geyer S, Grefkes C, Amunts K, Morosan P, Zilles K, Roland PE. Regional cerebral blood flow correlations of somatosensory areas 3a, 3b, 1, and 2 in humans during rest: a PET and cytoarchitectural study. Hum Brain Mapp. (2003) 19: 183-96. (Impact Factor 6.3)
- Bodegard A, Geyer S, Herath P, Grefkes C, Zilles K, Roland PE. Somatosensory areas engaged during discrimination of steady pressure, spring strength, and kinesthesia. Hum Brain Mapp. (2003) 20: 103-15. (Impact Factor 6.3)
- Fink GR, Marshall JC, Weiss PH, Stephan T, Grefkes C, Shah NJ, Zilles K, Dieterich M. Performing allocentric visuospatial judgments with induced distortion of the egocentric reference frame: an fMRI study with clinical implications. Neuroimage (2003) 20: 1505-17. (Impact Factor 5.7)
- Grefkes C, Weiss PH, Zilles K, Fink GR. Crossmodal processing of object features in human anterior intraparietal cortex: an fMRI study strongly implies equivalencies between humans and monkeys. Neuron (2002) 35:173-184. (Impact Factor 13.3)

- Fink GR, Marshall JC, Weiss PH, Stephan T, Shah NJ, Grefkes C, Zilles K, Dieterich M. Compensation for distorted egocentric representation of space implicates rights inferior parietal cortex. Cortex (2002)38(5): 854-859 (Impact Factor 4.1)
- Zilles K, Palomero-Gallagher N, Grefkes C, Scheperjans F, Boy C, Amunts K, Schleicher A. Architectonics of the human cerebral cortex and transmitter receptor fingerprints: reconciling functional neuroanatomy and neurochemistry. Eur Neuropsychopharm. (2002) 12:587-99. (Impact Factor 3.7)
- Bodegard A, Geyer S, Grefkes C, Zilles K, Roland PE. Hierarchical processing of tactile shape in the human brain. Neuron (2001) 31: 317-28. (Impact Factor 13.3)
- Grefkes C, Geyer S, Schormann T, Roland P, Zilles K.Human somatosensory area 2: observer-independent cytoarchitectonic mapping, interindividual variability, and population map. Neuroimage (2001) 14: 617-31. (Impact Factor 5.7)