

## 7. Literatur

Adrian ED. Double representation of the feet in the sensory cortex of the cat. *J. Physiol* 1940;98:16-18.

Adrian ED. Afferent discharges to the cerebral cortex from peripheral sense organs. *J. Physiol* 1941;100:159-91.

Akbarian S, Berndt K, Grusser OJ, Guldin W, Pause M, Schreier U. Responses of single neurons in the parietoinsular vestibular cortex of primates. *Ann NY Acad Sci* 1988; 545: 187-202.

Akbarian S, Grusser OJ, Guldin WO. Thalamic connections of the vestibular cortical fields in the squirrel monkey (*Saimiri sciureus*). *J Comp Neurol* 1992 ;326(3) :423-41.

Akbarian S, Grusser OJ, Guldin WO. Corticofugal projections to the vestibular nuclei in squirrel monkeys: further evidence of multiple cortical vestibular fields. *J Comp Neurol* 1993;332:89-104.

Akbarian S, Grusser OJ, Guldin WO. (1994). Corticofugal connections between the cerebral cortex and brainstem vestibular nuclei in the macaque monkey. *J Comp Neurol* 1994;339:421-437.

Andersen RA. Multimodal integration for representation of space in the posterior parietal cortex. *Philos Trans R Soc London B Biol Sci* 1997; 352:1421-1428.

Attwell D, Laughlin SB. An energy budget for signaling in the grey matter of the brain. *J Cereb Blood Flow Metab* 2001;21:1133-1145.

Bandettini PA, Jesmanovic A, Wong EC, Hyde JS. Processing strategies for timecourse data sets in functional MRI of the human brain. *Magn Reson Med* 1993;30:161-173.

Bandettini PA, Wong EC, Hinks RS, Tikofski RS, Hyde JS. Time course EPI of human brain function during task activation. *Magn Reson Med* 1992;25: 390-397.

Biguer B, Donaldson IM, Hein A, Jeannerod M. Vibration of neck muscles changes the apparent position of a visual target. C R Acad Sci III 1986;303(2):43-48.

Biguer B, Donaldson IM, Hein A, Jeannerod M. Neck muscle vibration modifies the representation of visual motion and direction in man. Brain 1988;111:1405-1424.

Bloch F. Nuclear Induction. Phys Rev 1946;70: 460-474.

Bogdanov SV. The origin of the piezoelectric effect in pyroelectric crystals. IEEE Trans Ultrason Ferroelectr Freq Control 2002;49(11):1469-73.

Bodegard A, Geyer S, Naito E, Zilles K, Roland PE. Somatosensory areas in man activated by moving stimuli: cytoarchitectonic mapping and PET. Neuroreport 2000;17(11): 87-91.

Bonin G, Bailey P. The Neocortex of Macaca mulatta. Univ Illinois Press Urbana III 1947; pp.163.

Bottini G, Sterzi R, Paulesu E, Vallar G, Cappa SF, Erminio F, Frackowiak RS. Identification of the central vestibular projections in man: a positron emission tomography activation study. Exp Brain Res 1994;99:164-9.

Bottini G, Paulesu E, Sterzi R, Warburton E, Wise RJ, Vallar G, Frackowiak RS, Frith CD. Modulation of conscious experience by peripheral sensory stimuli. Nature 1995 Aug 31;376(6543):778-81.

Bottini G, Karnath HO, Vallar G, Sterzi R, Frith CD, Frackowiak RSJ, Paulesu E. Cerebral representations for egocentric space: functional-anatomical evidence from caloric vestibular stimulation and neck vibration. Brain 2001;124:1182-1196.

Brandt T, Dieterich M, Danek A. Vestibular cortex lesions affect the perception of verticality. Ann.Neurol 1994;35:403-412.

Brandt T, Dietrich M. The vestibular cortex. Its locations, functions and disorders. *Ann NY Acad Sci* 1999;871:293-312.

Bremmer F, Kubischik M, Pekel M, Lappe M, Hoffmann KP. Linear vestibular self-motion signals in monkey medial superior temporal area. *Ann NY Acad Sci* 1999;871:272-281.

Bremmer F, Schlack A, Shah NJ, Zafiris O, Kubischik M, Hoffmann KP, Zilles K, Fink, GR. Polymodal motion processing in posterior parietal and premotor cortex: A human fMRI study strongly implies equivalencies between humans and monkeys. *Neuron* 2001;29:287-296.

Brodman K. Beiträge zur histologischen Lokalisation der Grosshirnrinde. Erste Mitteilung: Die Regio Rolandica. *J Psychol Neurol (Lpz)* 1903;2:79-107.

Bruce C, Desimone R, Gross CG. Visual properties of neurons in a polysensory area in superior temporal sulcus of the macaque. *J Neurophysiol* 1981;46: 369-384.

Büttner U, Büttner UW. Parietal cortex (2v) neuronal activity in the alert monkey during natural vestibular and optokinetic stimulation. *Brain Res* 1978;153:392-397.

Burton H, Fabri M. Ipsilateral intracortical connections of physiologically defined cutaneous representation in areas 3b and 1 of macaque monkeys: projections in the vicinity of the central sulcus. *J Comp Neurol* 1995;15:335(4):508-38.

Buxton R B, Frank LR. A model for the coupling between cerebral blood flow and oxygen metabolism during neuronal stimulation. *J Cereb Blood Flow metab* 1997;17: 72.

Caetano G, Jousmaki V. Evidence of vibrotactile input to human auditory cortex. *Neuroimage* 2006;1;29(1):15-28.

Carman GJ, Drury HA, Van Essen DC. Computational methods for reconstructing and unfolding the cerebral cortex. *Cereb Cortex* 1995;5:506-517.

Cohen J. Multiple Regression as a General Data-Analytic system. *Psy Bull* 1968;70: 426-443.

Cohen MS. Parametric analysis of fMRI data using linear systems methods. *Neuroimage* 1997;6:93-103.

Collins DL, AP Zijdenbos, Kollokian V, Sled JG, Kabani NJ, Holmes CJ, Evans AC. Design and Construction of a Realistic Digital Brain Phantom. *L Collins* 1998;07:21.

Creem SH, Downs TH, Wraga M, Harrington GS, Proffitt DR. An fMRI study of imagined self-rotation. *Cogn Affect Behav Neurosci* 2001;1(3):239-49.

Creutzfeldt O. Neurophysiological Correlates of Different Functional States of the Brain. *The Coupling of Function, Metabolism and Blood Flow in the Brain*, eds. Lassen N A, Ingvar D H. Munksgaard. *Brain Works* 1975; 21-46.

De la Mothe LA, Blumell S, Kajikawa Y, Hackett TA. Cortical connections of the auditory cortex in marmoset monkeys: core and medial belt regions. *J Comp Neurol* 2006 May 1;496(1):27-71.

DeYoe EA, Van Essen DC. Concurrent processing streams in monkey visual cortex. *Trends Neurosci* 1988;11:219-226.

Dietrich M, Bucher SF, Seelos KC, Brandt T. Horizontal or vertical optokinetic stimulation activates visual motion-sensitive, ocular motor and vestibular cortex areas with right hemispheric dominance. An fMRI study. *Brain* 1998;121:1479-1495.

Disbrow E, Roberts T, Krubitzer L. Somatotopic organization of cortical fields in the lateral sulcus of *Homo sapiens*: Evidence for SII and PV. *J Comp Neurol* 2000;418:1-21.

Disbrow E, Litinas E, Recanzone GH, Padberg J, Krubitzer L. Cortical connections of the second somatosensory area and the parietal ventral area in macaque monkeys. *The Journal of comparative Neurology* 2003;462:382-399.

Downar J, Crawley AP, Mikulis DJ, Davis KD. A multimodal cortical network for the detection of changes in the sensory environment. *Nat Neurosci* 2000;3:277-283.

Dumoulin SO, Bittar RG, Kabani NJ, Baker CL, Le Goualher G, Pike GB, Evans AC. A New anatomical landmark for reliable identification of human area V5/MT: a quantitative analysis of sulcan patterning. *Cerebral Cortex* 2000 ;10 :454-463.

Fasold O, von Bevern M, Kuhberg M, Ploner C J, Villringer A, Lempert T, Wenzel R. Human vestibular cortex as identified with caloric stimulation in functional magnetic resonance imaging. *Neuroimage* 2002;17:1384-1393.

Fasold O. Charakterisierung bewegungssensitiver kortikaler Areale mittels funktioneller Kernspintomographie. Humboldt Universität Berlin 2005.

Foerster O. Sensible cortikale Felder. In: Bumke O, Foerster O, editors. *Handbuch Neurologie, Allgemeine Neurologie Band VI*. Berlin: Springer.1936; pp:358-449.

Fox PT, Raichle M E. Focal physiological uncoupling of cerebral blood flow and oxidative metabolism during somatosensory stimulation in human subjects. *Proc Natl acad Sci USA* 1986;83:1140-1144.

Fox PT, Raichle ME, Mintun MA, Dence C. Nonoxidative glucose consumption focal physiologic neural activity. *Science* 1988;241: 462-464.

Frahm J, Kruger G, Merboldt KD, Kleinschmidt A. Dynamic uncoupling and recoupling of perfusion and oxidative metabolism during focal brain activation in man. *Magn Reson Med* 1996;35:143-148.

Francis EF, Kelly R, Bowtell WJR, Dunseath SE, Mc Glone. fMRI of the Response to Vibratory Stimulation of Digit Tips. *Neuroimage* 2000;11:188-202.

Friedman DP, Murray EA, O'Neill JB, Mishkin M. Cortical connections of somatosensory fields of the lateral sulcus of macaques: evidence for a corticolimbic pathway for touch. *J Comp Neurol* 1986;15 ;253(3): 323-347.

Gerthsen C, Kneser, Vogel. *Physik*. 1992 Springer Lehrbuch.

Geyer S, Schleicher A, Zilles K. Areas 3a, 3b and 1 of human primary somatosensory cortex. 1. Microstructural Organization and interindividual Variability. *Neuroimage* 1999;10(1): 63-83.

Geyer S, Schormann T, Mohlberg H, Zilles K. Areas 3a, 3b and 1 of Human Primary Somatosensory Cortex. 2. Spatial Normalization to Standard Anatomical Space. *Neuroimage* 2000;11:684-696.

Geyer S, Schleicher A, Schormann T, Mohlberg H, Bodegard A, et al. Integration of microstructural and functional aspects of human somatosensory areas 3a, 3b and 1 on the basis of computerized brain atlas. *Anat Embryol (Berl)* 2001;204:351-366.

Gjedde A, Marrett S. Glycolysis in neurons, not astrocytes, delays oxidative metabolism of human visual cortex during sustained checkerboard stimulation in vivo. *J Cereb Blood Flow Metab* 2001;21:1384-1392.

Gitelman DR, Nobre AC, Parrish et al. A large-scale distributed network for covert spatial attention: further anatomical delineation based on stringent behavioural and cognitive controls. *Brain* 1999;122:1093-1106.

Goodwin GM, McCloskey DI, Matthews PBC. The contribution of muscle afferents to kinaesthesia shown by vibration induced illusions of movement and by effects of paralyzing joint afferents. *Brain* 1972;95:705-748.

Graziano MS, Andersen RA, Snowden RJ. Tuning of MST neurons to spiral motions. *J Neurosci* 1994;14: 54-67.

Graziano MS, Hu XT, Gross CG. Visuospatial properties of ventral premotor cortex. *J Neurophysiol* 1997;77: 2268-2292.

Graziano MS, Gandhi S. Localisation of the polysensory zone in the precentral gyrus of anesthetized monkeys. *Exp. Brain Research* 2000;135(2):259-266.

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;14:617-631.

Grüsser OJ, Pause M, Schreiter U. Vestibular neurons in the parieto-insular cortex of monkeys (*Maca fascicularis*): visual and neck receptor responses. *J Physiol* 1990a;430: 537-583.

Grüsser OJ, Pause M, Schreiter U. Localization and responses of neurons in the parieto- insular vestibular cortex of awake monkeys (*Macaca fascicularis*). *J Physiol* 1990b;430: 537-557.

Guldin WO, Akbarian S, Grüsser OJ. Cortico-cortical connections and cytoarchitectonics of the primate vestibular cortex: a study in squirrel monkeys (*saimiri sciureus*). *J Comp Neurol* 1992;326:375-401.

Guldin WO, Grüsser OJ. Is there a vestibular cortex? *Trends Neurosci* 1998;21:254-259.

Han Y, Lennestrand G. Eye position changes induced by neck muscle vibration in strabismic subjects. *Graefe`s Archive for clinical and experimental Ophthalmology* 1999;237:21-28.

Harrington G, Wright C, Downs H. A new vibrotactile Stimulator for functional MRI. *Human Brain Mapping* 2000;10:140-145.

Harrington G, Downs H. fMRI mapping of the somatosensory cortex with vibratory stimuli. Is there a frequency dependency on stimulus frequency? *Brain Research* 2001;897:188-192.

Hassler R, Muhs-Clement K. Architektonischer Aufbau des sensomotorischen und parietalen Cortex der Katze. *J. Hirnforschung* 1959;6: 377-420.

Heinze D, Rosenhagen C, Blücher U, Dannenberg K, Conrad B, Baer H. Darstellung räumlicher Wahrnehmungsprozesse im fMRI durch vibratorische Stimulation unterschiedlicher Amplitude und Frequenz der Nackenmuskulatur. Tätigkeitsbericht der medizinisch technischen Labore der Charite 2001/2002, 55-57.

Heeger DJ, Huk AC, Geisler WS, Albrecht DG. Spikes versus BOLD: what does neuroimaging tell us about neuronal activity? *Nat Neurosci* 2000;3:631-633.

Heledd C, Hart, Alan R, Palmer, Hall DA. Different areas of human Non-primary auditory cortex area activated by sounds with spatial and nonspatial properties. *Human Brain Mapping* 2004;21:178-190.

Hinkley LB, Disbrow EA, Roberts TPL, Krubitzer LA. Somatomotor integration in the human sylvian fissure. *Soc Neurophysiol* 2001;70: 444-447.

Johannsen L, Ackermann H, Karnath HO. Lasting amelioration of spatial neglect by treatment with neck muscle vibration even without concurrent training. *J Rehabil med* 2003;35(6): 249-53.

Jones EG, Porter R. What is Area 3a ? *Brain Research Review* 1980;2:1-43.

Jueptner M, Weiller C. Review: does measurement of regional cerebral blood flow reflect synaptic activity? Implications for PET and fMRI. *Neuroimage* 1995;2:148-156.

Kakigi R, Shimojo M, Hoshiyama M, Koyama S, Watanabe S, Naka D Suzuki, K.Nakamura A. Effects of movement and movement imagery on somatosensory evoked magnetic fields following posterior nerve stimulation. *Brain Res Cogn Brain Res* 1997;5:241-253.

Karnath HO, Christ K, Hartje W. Decrease or contralateral neglect by neck muscle vibration and spatial orientation of trunk midline. *Brain* 1993;116(2): 383-96.



Karnath HO, Sievering D, Fetter M. The interactive contribution of neck muscle proprioception and vestibular stimulation to subject "straight ahead" orientation in man. *Exp Brain Res* 1994;101:140-146.

Karnath HO. Transcutaneous electrical stimulation and vibration of neck muscles in neglect. *Exp Brain Res* 1995;105(2):321-4.

Karnath HO. Subjective body orientation in neglect and the interactive contribution of neck muscle proprioception and vestibular stimulation. *Brain* 1994;117: 1001-12.

Karnath HO. Spatial orientation and the representation of space with parietal lobe lesions. *Philos Trans R Soc Lond Biol Sci* 1997;29:352: 1411-9.

Karnath HO. Effekt of prolonged neck muscle vibration on lateral head tilt in severe spasmodic torticollis. *J Neurol Neurosurg Psychiatry* 2000;69:658-660.

Karnath HO. New insights into the function of the superior temporal cortex. *Nat Rev Neurosci* 2001;8:568-76.

Karnath HO, Ferber S, Himmelbach M. Spatial awareness is a function of the temporal not the posterior parietal lobe. *Nature* 2001;411:950-953.

Karnath HO, Reich E, Rorden C, Fetter M, Driver J. The perception of body orientation after neck-proprioceptive stimulation. *Exp Brain Res* 2002;143:350-358.

Karnath HO, Fruhmann-Berger M, Küker W, Rorden Ch. The Anatomy of Spatial Neglect based on Voxelwise Statistical Analysis: A Study of 140 Patients. *Cereb Cortex* 2004 Oct;14(10):1164-72.

Kim YH, Gitelman DR, Nobre AC, Parrish TB, LaBar KS, Mesulam M. The large-scale neural network for spatial attention displays multifunctional overlap but differential asymmetry. *Neuroimage* 1999;9:269-277.

Krubitzer L, Huffmann KJ, Disbrow E, Recanzone G. Organization of area 3a in macaque monkeys : contributions of the cortical phenotype. *J Comp Neurol* 2004 ;471(1):97-111.

Krubitzer LA, Calford MB. Five topographically organized fields in the somatosensory cortex of the flying fox: microelectrode maps, myeloarchitecture and cortical modules. *J Comp Neurol* 1992;317(1):1-30.

Kurth R, Villringer K, Curio G, Wolf K, Krause T, Repenthin J, Schwiemann J, Deuchert M, Villringer A. fMRI shows multiple somatotopic digit representation in human primary somatosensory cortex. *Neuro Report* 2000;11:1487-1491.

Kurth R, Villringer K, Mackert BM, Schwiemann J, Braun J, Curio G, Villringer A. MRI assessment of somatotopy in human Brodmann area 3b by electrical finger stimulation. *Neuro Report* 1998;9:207-212.

Lackner JR, Levine MS. Changes in apparent body orientation and sensory localization induced by vibration of postural muscles: vibratory myesthetic illusions. *Aviation, Space and Environmental Medicine* 1979;50:346-354.

Lauritzen M. Relationship of spikes, synaptic activity, and local changes of cerebral blood flow. *J Cereb Blood Flow Metab* 2001;21:1367-1383.

Lehmann C, Herdener M, Esposito F, Hubl D, di Salle F, Scheffler K, Bach DR, Federspiel A, Kretz R, Dierks T, Seifritz E. Differential patterns of multisensory interactions in core and belt areas of human auditory cortex. *Neuroimage* 2006;31(1):294-300.

Lennerstrand G, Han Y, Velay JL. Properties of eye movements induced by activation of neck muscles proprioceptors. *Graefes Arch Clin Exp Ophthalmol* 1996;234(11):703-9.

Lewald J, Karnath HO, Ehrenstein WH. Neck-proprioceptive influence on auditory lateralization. *Exp Brain Res* 1999;125:389-396.

Lin YY, Simoes C, Forss N, Hars R. Differential effects of muscle contraction from various body parts on neuromagnetic somatosensory responses. *Neuroimage* 2000;11:334-340.

Linda L, Porter, Izraeli R. The effects of localized inactivation of Somatosensory Cortex, Area 3a on Area 2 in Cats. *Somatosensory and Motor Research* 1993;10:399-413.

Logothetis NK, Pauls J, Augath M, Trinath T, Oeltermann A. Neurophysiological investigation of the basis of the fMRI signal. *Nature* 2001;412:150-157.

Luppino G, Murata A, Govoni P, Matelli M. Largely segregated parietofrontal connections linking rostral intraparietal cortex (areas AIP and VIP) and the ventral premotor cortex (areas F5 and F4). *Exp Brain Res* 1999;128:181-187.

Madsen PL, Linde R, Hasselbalch SG, Paulson OB, Lassen NA. Activation-induced resetting of cerebral oxygen and glucose uptake in the rat. *J Cereb. Blood Flow Metab* 1998;18:742-748.

Magistretti PJ, Pellerin L. Cellular mechanisms of brain energy metabolism and their relevance to functional brain imaging. *Philos Trans R Soc Lond B Biol Sci* 1999;354: 1155-1163.

Malonek D, Grinvald A. Interactions between electrical activity and cortical microcirculation revealed by imaging spectroscopy: implications for functional brain mapping. *Science* 1996;272: 551-554.

Mansfield P, Maudsley AA. Medical imaging by NMR. *Br J Radiol* 1977;50:188-194.

Mc Closkey DI. Differences between the senses of movement and position shown by the effects of loading and vibration of muscles in man. *Brain Research* 1973;61:119-131.

Moore I, Chantal E, Stern E et al. Segregation of Somatosensory Activation in the Human Rolandic Cortex using fMRI. *J Neurophysiol* 2000;84:558-569.

Mountcastle VB. Central nervous mechanisms in sensation. In: Medical physiology, Vol.I (mountcastle VB ed.)1980;327-605. St. Louis, MO: Mosby.

Nichols T, Brett M, Andersson J, Wager T, Poline JB. Valid conjunction inference with the minimum statistic. *Neuroimage* 2005;25:653-660.

Nowinski WL. The cerefy brain atlases: continuous enhancement of the electronic talairach-tournoux brain atlas. *Neuroinformatics* 2005;3(4):293-300.

Nudo RJ, Masterton RB. Stimulation- induced (14C)2-deoxyglucose labeling of synaptic activity in the central auditory system. *J Comp Neurol* 1986;245: 553-565.

Obrig H, Hirth C, Junge-Hülsing JG, Doge C, Wolf T, Dirnagl U, Villringer A. Cerebral oxygenation changes in response to motor stimulation. *J Appl Physiol* 1996;81:1174-1183.

Ödkvist LM, Schwarz DW, Friedrickson J M, Hassler R. Projection of the vestibular nerve to the area 3a arm field in the squirrel monkey. *Exp Brain Res* 1974;21:97-105.

Ogawa, S, Lee TM, Kay AR, Tank D W. Brain magnetic resonance imaging with contrast dependent on blood oxygenation. *Proc Natl Acad Sci USA* 1990;87:9868-9872.

Ogawa S, Menon RS, Tank DW, Kim SG, Merkle H, Ellermann JM, Ugurbil K. Functional brain mapping by blood oxygenation level-dependent contrast magnetic resonance imaging. A comparison of signal characteristics with a biophysical model. *Biophys J* 1993;64:803-812.

Ono M, Kubik S, Abernathey CD. Atlas of the Cerebral Sulci. Stuttgart: Georg Thieme Verlag 1990.

Oscarsson O, Rosén I. Short latency projections to the cat`s cerebral cortex of large muscle spindle afferents in the contralateral forelimb. *J Physiol (Lond)* 1966;182:164-184.

Penfield W, Rasmussen T. The cerebral cortex of man: a clinical study of localization of function. 1950 New York: Hafner.

Penfield W. Vestibular sensation and the cerebral cortex. *Ann Otol Rhinol Laryngol* 1957;66: 691-698.

Phillips CB, Powell T, Wiesendanger M. Projection from low threshold muscle afferents of hand and forearm to area 3a of baboon's cortex. *J Physiol* 1971;217:419-446.

Pons TP, Kaas JH. Corticocortical connections of area 2 of somatosensory cortex in macaque monkeys: A correlative anatomical and electrophysiological study. *J Comp Neurol* 1986;248:313-335.

Popov KE, Lekhel H, Faldon M, Bronstein AM, Gresty MA. Visual and oculomotor responses induced by neck vibration in normal subjects and labyrinthine-defective patients. *Exp Brain Res* 1999;128:343-352.

Prichard J, Rothman D, Novotny E, Petroff O, Kuwabra T, Avison M, Howseman A, Hnastock C, Shulman R. Lactate rise detected by <sup>1</sup>H NMR in human visual cortex during physiologic stimulation. *Proc Natl Acad Sci USA* 1991;88:5829-5831.

Purcell EM, Tottey HC, Puond R. Resonance absorption by nuclear moments in a solid. *Phys Rev* 1946;69:37-38.

Radovanovic S, Korotkov A, Ljubisavljevic M, Lyskov E, Thunbe J, Johannsson H. Comparison of brain activity during different types of proprioceptive inputs: a positron emission tomography study. *Exp Brain Res* 2002;143(3): 276-85.

Rees G, Friston K, Koch C. A direct quantitative relationship between the functional properties and macaque V5. *Nat Neurosci* 2000;3:716-723.

Rizzolatti G, Luppino G, Matelli M. The organization of the cortical motor system: new concepts. *Electroencephalogr Clin Neurophysiol* 1998;106:283-296.

Roland PE, Zilles K. Brain atlases-A new research tool. Trends Neurosci 1994;17:458-467.

Roland PE, Geyer S, Amunts K, Schormann T, Schleicher A, Malikovic A, Zilles K. Cytoarchitectural Maps of the Human Brain in Standard Anatomical Space. Human Brain Mapping 1997;5: 222-227.

Robinson CJ, Burton H. Somatotopographic organization in the second somatosensory area of M.fasciculairs. J Comp Neurol 1980a;192:43-67.

Roy C, Sherrington C. On the regulation of the blood supply of the brain. J Physiol 1890;11:85-108.

Ruben J, Schwiemann J, Deuchert M, Meyer R, Krause T, Curio G, Villringer A. Somatotopic Organization of Human Secondary Somatosensory Cortex. Cerebral Cortex 2001;11: 463-473.

Sappey-Marinier D, Calabrese G, Fein G, Hugg JW, Biggins C, Weiner MW. Effect of photic stimulation on human visual cortex lactate and phosphate using <sup>1</sup>H and <sup>31</sup>P magnetic resonance spectroscopy. J Cereb Blood Flow Metab 1992;12:584-592.

Schindler I, Kerkhoff G, Karnath HO, Keller I, Goldenberg G. J Neurol Neurosurgery Psychiatry 2002;73:412-419.

Schwartz WJ, Smith CB, Davidsen L, Savaki H, Sokoloff L, Mata M, Fink DJ, Gainer H. Metabolic mapping of functional activity in the hypothalamo-neurohypophysial system of the rat. Science 1979;205:723-725.

Schwarz DW, Deecke L, Fredrickson JM. Cortical projection of group I muscles afferents to areas 2, 3a and the vestibular field in the rhesus monkey. Exp Brain Res 1973;17:516-526.

Sereno MI, Dale AM, Reppas JB, Kwong KK, Belliveau JW, Brady TJ, Rosen BR, Tootell RB. Borders of multiple visual areas in humans revealed by functional magnetic resonance imaging. *Science* 1995;268:889-893.

Shulman RG, Blamire AM, Rothman DL, McCarthy G. Nuclear magnetic resonance imaging and spectroscopy of human brain function. *Proc Natl Acad Sci USA* 1993;90:3127-3133.

Shulman RG, Rothman DL. Interpreting functional imaging studies in terms of neurotransmitter cycling. *Proc Natl Acad Sci USA* 1998;95:11993-11998.

Sibson NR, Dhankhar A, Mason GF, Rothman DL, Behar KL., Shulman RG. Stoichiometric coupling of brain glucose metabolism and glutamatergic neuronal activity. *Proc Natl Acad Sci USA* 1998;95:316-321.

Snyder LH, Grieve KL, Brotchie P, Andersen RA. Separate body- and world referenced representations of visual space in parietal cortex. *Nature* 1998;394:27.

Stehling MK, Nitz W, Holzknecht N. Schnelle und ultraschnelle Magnetresonanztherapie. Grundprinzipien, Pulssequenzen und spezielle Eigenschaften. *Radiologe* 1995;35:879-893.

Tanaka K, Saito H. Analysis of motion of the visual field by direction, expansion/contraction, and rotation cells clustered in the dorsal the medial superior temporal area of the macaque monkey. *J Neurophysiol* 1989;62:626-641.

Taylor JL, McCloskey DI. Illusions of head and visual target displacement induced by vibration of neck muscles. *Brain* 1991;114:755-759.

Thier P, Erickson R G. Vestibular input to visual-tracking neurons in area MST of awake rhesus monkeys. *Ann NY Acad Sci* 1992;656:960-963.

Thulborn KR, Waterton JC, Matthews PM, Radda GK. Oxygenation dependence of the transverse relaxation time of water protons in whole blood at high field. *Biochim Biophys Acta* 1982;714:265-270.

Tootell RB, Reppas JB, Kwong KK, Malach R, Born RT, Brady TJ, Rosen BR, Belliveau JW. Functional analysis of human MT and related visual cortical areas using magnetic resonance imaging. *J Neurosci* 1995;15:3215-3230.

Tootell RB, Hadjikhani NK, Vanduffel W, Liu AK, Mendola JD, Sereno MI, Dale AM. Functional analysis of V3A and related areas in human visual cortex. *J Neurosci* 1997;17:7060-7078.

Tootell RB, Hadjikhani N, Hall EK, Marrett S, Vanduffel W, Vaughan JT, Dale AM. The retinotopy of visual spatial attention. *Neuron* 1998;21:1409-1422.

Vallar G, Sterzi R, Bottini G, Cappa S, Rusconi ML. Temporary remission after vestibular stimulation. A sensory neglect phenomenon. *Cortex* 1990; 26:123-31.

Van Essen DC, Drury HA, Joshis S, Miller MI. Functional and structural mapping of human cerebral cortex; solutions are in the surfaces. *Proc Natl Acad Sci USA* 1998;95:788-795.

Villringer A, Dirnagl U. Coupling of brain activity and cerebral blood flow: basis of functional neuroimaging. *Cerebrovasc Brain Metab Rev* 1995;7:240-276.

Villringer K, Kurth R, Repenthin J, Stoll T, Curio G, Schwiemann J, Wolf K, Villringer A. FMRI mapping of digital and facial sites in human Brodmann area 3b. *Neuroimage* 1998;5:403.

Vogt C, Vogt O. Allgemeine Ergebnisse unserer Hirnforschung. *J Psychol Neurol (Lpz)* 1919;25:277-462.



Watson JD, Myers R, Frackowiak RS, Hajnal JV, Woods RP, Mazziotta JC, Shipp S, Zeki S. Area V5 of the human brain: evidence from a combined study using positron emission tomography and magnetic resonance imaging. *Cereb Cortex* 1993;3:79-94.

Wenzel R, Obrig H, Ruben J, Villringer K, Thiel A, Bernading J, Dirnagl U, Villringer A. Cerebral blood oxygenation changes induced by visual stimulation in humans. *J Biomed Optics* 1996b;1:399-404.

White LE, Andrews TJ, Hulette C, Richards A, Groelle M, Paydafar J, Purves D. Structure of the human sensorimotor system. I. Morphology and cytoarchitecture of the central sulcus. *Cereb Cortex* 1997;7:18-30.

Whitsel BL, Petrucelli LM, Werner G. Symmetry and connectivity in the map of the body surface recording in somatosensory area II of primates. *J Neurophysiol* 1969;32:170-183.

Woolsey CN. Second somatic receiving areas in the cerebral cortex of cat, dog and monkey. *Fed Proc* 1943;2:55-56.

Woolsey CN, Fairman D. Contralateral, ipsilateral and bilateral representation of cutaneous receptors in somatic areas I and II of the cerebral cortex of pig, sheep and other mammals. *Surgery* 1946;19:684-702.

Xiang J, Hoshiyama M, Koyama S, Kaneoke Y, Suzuki H, Watanabe S, Naka D, Kakigi R. Somatosensory evoked magnetic fields following passive finger movement. *Brain Res Cogn Brain Res* 1997;6:73-82.

Young JP, Geyer S, Grefkes C, Amunts K, Morosan P, Zilles K, Roland PE. Regional cerebral bloodflow correlations of somatosensory areas 3a, 3b, 1 and 2 in humans during rest: a PET and cytoarchitectural study. *Hum Brain Mapp* 2003;19(3):183-96.