

Freiburg

Neurochirurgie Neurozentrum Albert-Ludwigs-Universität Freiburg

Breisacher Straße 64 79106 Freiburg

www.uniklinik-freiburg.de

Ärztlicher Direktor

Prof. Dr. Jürgen Beck

Abteilung für Stereotaktische und Funktionelle Prof. Dr. Volker Arnd Coenen Ärztlicher Leiter

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Publications

Martinez-Lizana E, Fauser S, Brandt A, Schuler E, Wiegand G, Doostkam S, San Antonio-Arce V, Jacobs J, Bast T, Shah M, Zentner J, Schulze-Bonhage A. Long-term [seizure outcome in pediatric patients](#) with [focal cortical dysplasia](#) undergoing tailored and standard surgical [resections](#). Seizure. 2018 Sep 26;62:66-73. doi: 10.1016/j.seizure.2018.09.021. [Epub ahead of print] PubMed PMID: 30296740.

Coenen VA, Rijntjes M, Sajonz B, Piroth T, Prokop T, Jost W, Trippel M, Urbach H, Reinacher PC. Bilateral Globus Pallidus Internus Deep Brain Stimulation in a Case of Progressive Dystonia in Mohr-Tranebjærg Syndrome with Bilateral Cochlear Implants. J Neurol Surg A Cent Eur Neurosurg. 2018 Oct 5. doi: 10.1055/s-0038-1669472. [Epub ahead of print] PubMed PMID: 30290379.

2: Kilian HM, Meyer DM, Bewernick BH, Spanier S, Coenen VA, Schlaepfer TE. Discontinuation of Superolateral Medial Forebrain Bundle Deep Brain Stimulation for Treatment-Resistant Depression Leads to Critical Relapse. Biol Psychiatry. 2018 Sep 22. pii: S0006-3223(18)31748-7. doi: 10.1016/j.biopsych.2018.07.025. [Epub ahead of print] PubMed PMID: 30253883.

3: Gruber D, Südmeier M, Deuschl G, Falk D, Krauss JK, Mueller J, Müller JU, Poewe W, Schneider GH, Schrader C, Vesper J, Volkmann J, Winter C, Kupsch A, Schnitzler A; DBS study group for dystonia. Neurostimulation in tardive dystonia/dyskinesia: A delayed start, sham stimulation-controlled randomized trial. Brain Stimul. 2018 Sep 11. pii: S1935-861X(18)30289-4. doi: 10.1016/j.brs.2018.08.006. [Epub ahead of print] PubMed PMID: 30249417.

4: Andreiuolo F, Varlet P, Tauziède-Espriat A, Jünger ST, Dörner E, Dreschmann V, Kuchelmeister K, Waha A, Haberler C, Slavc I, Corbacioglu S, Riemenschneider MJ, Leipold A, Rüdiger T, Körholz D, Acker T, Russo A, Faber J, Sommer C, Armbrust S, Rose M, Erdlenbruch B, Hans VH, Bernbeck B, Schneider D, Lorenzen J, Ebinger M, Handgrettinger R, Neumann M, van Buuren M, Prinz M, Roganovic J, Jakovcevic A, Park SH, Grill J, Puget S, Messing-Jünger M, Reinhard H, Bergmann M, Hattingen E, Pietsch T. Childhood supratentorial ependymomas with YAP1-MAML1 fusion: an entity with

characteristic clinical, radiological, cytogenetic and histopathological features. *Brain Pathol.* 2018 Sep 23. doi: 10.1111/bpa.12659. [Epub ahead of print] PubMed PMID: 30246434.

5: Brüßler J, Strehlow B, Becker A, Schubert R, Schümmelfeder J, Nimsky C, Bakowsky U. Nanoscaled ultrasound contrast agents for enhanced sonothrombolysis. *Colloids Surf B Biointerfaces.* 2018 Sep 17;172:728-733. doi: 10.1016/j.colsurfb.2018.09.037. [Epub ahead of print] PubMed PMID: 30245298.

6: Goebel U. Patient blood management in intracranial neurosurgery-do we have sufficient data to define a transfusion threshold? Comment on *Br J Anaesth* 2018; 120: 988-98. *Br J Anaesth.* 2018 Oct;121(4):974-976. doi: 10.1016/j.bja.2018.05.067. Epub 2018 Jun 30. PubMed PMID: 30236264.

7: Krüger MT, Klingler JH, Jilg C, Steiert C, Zschiedrich S, Van Velthoven V, Gläsker S. Polyglobulia in patients with hemangioblastomas is related to tumor size but not to serum erythropoietin. *Hered Cancer Clin Pract.* 2018 Sep 11;16:15. doi: 10.1186/s13053-018-0097-x. eCollection 2018. PubMed PMID: 30214643; PubMed Central PMCID: PMC6131788.

Heiland DH, Haaker G, Watzlawik R, Delev D, Masalha W, Franco P, Machein M, Staszewski O, Oelhke O, Nicolay NH, Schnell O. One decade of glioblastoma multiforme surgery in 342 elderly patients: what have we learned? *J Neurooncol.* 2018 Aug 3. doi: 10.1007/s11060-018-2964-8. [Epub ahead of print] PubMed PMID: 30076585.

2: Maggio N, Vlachos A. Tumor necrosis factor (TNF) modulates synaptic plasticity in a concentration-dependent manner through intracellular calcium stores. *J Mol Med (Berl).* 2018 Aug 2. doi: 10.1007/s00109-018-1674-1. [Epub ahead of print] PubMed PMID: 30073573.

3: Sievers P, Stichel D, Schrimpf D, Sahm F, Koelsche C, Reuss DE, Wefers AK, Reinhardt A, Huang K, Ebrahimi A, Hou Y, Pajtler KW, Pfister SM, Hasselblatt M, Stummer W, Schick U, Hartmann C, Hagel C, Staszewski O, Reifenberger G, Beschorner R, Coras R, Keyvani K, Kohlhof P, Diomedi-Camassei F, Herold-Mende C, Giangaspero F, Rushing E, Giannini C, Korshunov A, Jones DTW, von Deimling A. FGFR1:TACC1 fusion is a frequent event in molecularly defined extraventricular neurocytoma. *Acta Neuropathol.* 2018 Aug;136(2):293-302. doi: 10.1007/s00401-018-1882-3. Epub 2018 Jul 5. PubMed PMID: 29978331.

4: Reinhardt A, Stichel D, Schrimpf D, Sahm F, Korshunov A, Reuss DE, Koelsche C, Huang K, Wefers AK, Hovestadt V, Sill M, Gramatzki D, Felsberg J, Reifenberger G, Koch A, Thomale UW, Becker A, Hans VH, Prinz M, Staszewski O, Acker T, Dohmen H, Hartmann C, Mueller W, Tuffaha MSA, Paulus W, Heß K, Brokinkel B, Schittenhelm J, Monoranu CM, Kessler AF, Loehr M, Buslei R, Deckert M, Mawrin C, Kohlhof P, Hewer E, Olar A, Rodriguez FJ, Giannini C, NageswaraRao AA, Tabori U, Nunes NM, Weller M, Pohl U, Jaunmuktane Z, Brandner S, Unterberg A, Hänggi D, Platten M, Pfister SM, Wick W, Herold-Mende C, Jones DTW, von Deimling A, Capper D. Anaplastic astrocytoma with piloid features, a novel molecular class of IDH wildtype glioma with recurrent MAPK pathway, CDKN2A/B and ATRX alterations. *Acta Neuropathol.* 2018 Aug;136(2):273-291. doi: 10.1007/s00401-018-1837-8. Epub 2018 Mar 21. PubMed PMID: 29564591.

5: Dias RB, Rodrigues TM, Rombo DM, Ribeiro FF, Rodrigues J, McGarvey J, Orcinha C, Henley JM, Sebastião AM. Erythropoietin Induces Homeostatic Plasticity at Hippocampal Synapses. *Cereb Cortex.* 2018 Aug 1;28(8):2795-2809. doi: 10.1093/cercor/bhx159. PubMed PMID: 29053799.

6: Schaub C, Kebir S, Junold N, Hattingen E, Schäfer N, Steinbach JP, Weyerbrock A, Hau P, Goldbrunner R, Niessen M, Mack F, Stuplich M, Tzardis T, Bähr O, Kortmann RD, Schlegel U, Schmidt-Graf F, Rohde V, Braun C, Hänel M, Sabel M, Gerlach R, Krex D, Belka C, Vatter H, Proescholdt M, Herrlinger U, Glas M. Tumor growth patterns of MGMT-non-methylated glioblastoma in the

randomized GLARIUS trial. *J Cancer Res Clin Oncol.* 2018 Aug;144(8):1581-1589. doi: 10.1007/s00432-018-2671-z. Epub 2018 May 28. PubMed PMID: 29808316.

7: Kellmeyer P, Grosse-Wentrup M, Schulze-Bonhage A, Ziemann U, Ball T. Electrophysiological correlates of neurodegeneration in motor and non-motor brain regions in amyotrophic lateral sclerosis-implications for brain-computer interfacing. *J Neural Eng.* 2018 Aug;15(4):041003. doi: 10.1088/1741-2552/aabfa5. Epub 2018 Apr 20. PubMed PMID: 29676287.

8: Szczurkowska J, Pischedda F, Pinto B, Managò F, Haas CA, Summa M, Bertorelli R, Papaleo F, Schäfer MK, Piccoli G, Cancedda L. NEGR1 and FGFR2 cooperatively regulate cortical development and core behaviours related to autism disorders in mice. *Brain.* 2018 Jul 27. doi: 10.1093/brain/awy190. [Epub ahead of print] PubMed PMID: 30059965.

9: Trebaul L, Deman P, Tuyisenge V, Jedynak M, Hugues E, Rudrauf D, Bhattacharjee M, Tadel F, Chanteloup-Foret B, Saubat C, Reyes Mejia GC, Adam C, Nica A, Pail M, Dubeau F, Rheims S, Trébuchon A, Wang H, Liu S, Blauwblomme T, Garcés M, De Palma L, Valentin A, Metsähonkala EL, Petrescu AM, Landré E, Szurhaj W, Hirsch E, Valton L, Rocamora R, Schulze-Bonhage A, Mindruta I, Francione S, Maillard L, Taussig D, Kahane P, David O. Probabilistic functional tractography of the human cortex revisited. *Neuroimage.* 2018 Jul 17;181:414-429. doi: 10.1016/j.neuroimage.2018.07.039. [Epub ahead of print] PubMed PMID: 30025851.

10: Papanagiotou P, Haussen DC, Turjman F, Labreuche J, Piotin M, Kastrup A, Steglich-Arnholm H, Holtmannspötter M, Taschner C, Eiden S, Nogueira RG, Boutchakova M, Siddiqui A, Lapergue B, Dorn F, Cognard C, Killer M, Mangiafico S, Ribo M, Psychogios MN, Spiotta A, Labeyrie MA, Biondi A, Mazighi M, Richard S, Anxionnat R, Bracard S, Gory B; TITAN Investigators. Carotid Stenting With Antithrombotic Agents and Intracranial Thrombectomy Leads to the Highest Recanalization Rate in Patients With Acute Stroke With Tandem Lesions. *JACC Cardiovasc Interv.* 2018 Jul 9;11(13):1290-1299. doi: 10.1016/j.jcin.2018.05.036. PubMed PMID: 29976365.

11: Gerlach R, Rosahl S, Kellner G. Calvian Endo-pen: New Coagulation Forceps for Endoscopic Endonasal Transsphenoidal Surgery. *J Neurol Surg A Cent Eur Neurosurg.* 2018 Jul 6. doi: 10.1055/s-0038-1655731. [Epub ahead of print] PubMed PMID: 29980157.

12: Urbach H, Kaya E, Hubbe U. Osteophyte piercing of the dura. *Clin Neuroradiol.* 2018 Jul 5. doi: 10.1007/s00062-018-0703-3. [Epub ahead of print] PubMed PMID: 29978235.

13: Scholz C, Klingler JH, Scheiwe C, Naseri Y, Masalha W, Hubbe U. Atlantoaxial Instability in Patients Older Than 70 Years: What Is the Outcome When Further Conservative Treatment Is Not an Option? *J Neurol Surg A Cent Eur Neurosurg.* 2018 Jul 4. doi: 10.1055/s-0038-1646958. [Epub ahead of print] PubMed PMID: 29972858.

14: Hieber M, Hollasch H, Heck D, Mächtel M, Geisen U, Niesen WD, Brich J, Harloff A. Reversal of dabigatran using idarucizumab: single center experience in four acute stroke patients. *J Thromb Thrombolysis.* 2018 Jul;46(1):12-15. doi: 10.1007/s11239-018-1658-6. PubMed PMID: 29633066.

15: Gröbner SN, Worst BC, Weischenfeldt J, Buchhalter I, Kleinheinz K, Rudneva VA, Johann PD, Balasubramanian GP, Segura-Wang M, Brabetz S, Bender S, Hutter B, Sturm D, Pfaff E, Hübschmann D, Zipprich G, Heinold M, Eils J, Lawerenz C, Erkek S, Lambo S, Waszak S, Blattmann C, Borkhardt A, Kuhlen M, Eggert A, Fulda S, Gessler M, Wegert J, Kappler R, Baumhoer D, Burdach S, Kirschner-Schwabe R, Kontny U, Kulozik AE, Lohmann D, Hettmer S, Eckert C, Bielack S, Nathrath M, Niemeyer C, Richter GH, Schulte J, Siebert R, Westermann F, Molenaar JJ, Vassal G, Witt H, Burkhardt B, Kratz CP, Witt O, van Tilburg CM, Kramm CM, Fleischhack G, Dirksen U, Rutkowski S, Fröhwald M, von Hoff

K, Wolf S, Klingebiel T, Koscielniak E, Landgraf P, Koster J, Resnick AC, Zhang J, Liu Y, Zhou X, Waanders AJ, Zwijnenburg DA, Raman P, Brors B, Weber UD, Northcott PA, Pajtler KW, Kool M, Piro RM, Korbel JO, Schlesner M, Eils R, Jones DTW, Lichter P, Chavez L, Zapata M, Pfister SM; ICGC PedBrain-Seq Project; ICGC MMML-Seq Project. Author Correction: The landscape of genomic alterations across childhood cancers. *Nature*. 2018 Jul;559(7714):E10. doi: 10.1038/s41586-018-0167-2. PubMed PMID: 29875405.

16: Ramantani G, Kadish NE, Mayer H, Anastasopoulos C, Wagner K, Reuner G, Strobl K, Schubert-Bast S, Wiegand G, Brandt A, Korinthenberg R, Mader I, van Velthoven V, Zentner J, Schulze-Bonhage A, Bast T. Frontal Lobe Epilepsy Surgery in Childhood and Adolescence: Predictors of Long-Term Seizure Freedom, Overall Cognitive and Adaptive Functioning. *Neurosurgery*. 2018 Jul 1;83(1):93-103. doi: 10.1093/neuros/nyx340. PubMed PMID: 29106684.

17: Wein T, Esquenazi A, Jost WH, Ward AB, Pan G, Dimitrova R. OnabotulinumtoxinA for the Treatment of Poststroke Distal Lower Limb Spasticity: A Randomized Trial. *PM R*. 2018 Jul;10(7):693-703. doi: 10.1016/j.pmrj.2017.12.006. Epub 2018 Jan 9. PubMed PMID: 29330071.

18: Fung C, Mavrakis E, Filis A, Fischer I, Suresh M, Tortora A, Cornelius JF, Bostelmann R, Gralla J, Beck J, Raabe A, Khan MO, Steiger HJ, Petridis AK. Anatomical evaluation of intracranial aneurysm rupture risk in patients with multiple aneurysms. *Neurosurg Rev*. 2018 Jun 30. doi: 10.1007/s10143-018-0998-1. [Epub ahead of print] PubMed PMID: 29959638.

19: Aldave G, Gonzalez-Huarriz M, Rubio A, Romero JP, Ravi D, Miñana B, Cuadrado-Tejedor M, García-Osta A, Verhaak R, Xipell E, Martínez-Vélez N, de la Rocha AA, Puigdelloses M, García-Moure M, Marigil M, Pérez-Larraya JG, Marín-Bejar O, Huarte M, Carro MS, Ferrarese R, Belda-Iniesta C, Ayuso A, Prat-Acín R, Pastor F, Díez-Valle R, Tejada S, Alonso MM. The aberrant splicing of BAF45d links splicing regulation and transcription in glioblastoma. *Neuro Oncol*. 2018 Jun 18;20(7):930-941. doi: 10.1093/neuonc/noy007. PubMed PMID: 29373718; PubMed Central PMCID: PMC6007380.

20: Schäfer N, Proescholdt M, Steinbach JP, Weyerbrock A, Hau P, Grauer O, Goldbrunner R, Friedrich F, Rohde V, Ringel F, Schlegel U, Sabel M, Ronellenfitsch MW, Uhl M, Grau S, Hänel M, Schnell O, Krex D, Vajkoczy P, Tabatabai G, Mack F, Schaub C, Tzaris T, Nießen M, Kebir S, Leutgeb B, Urbach H, Belka C, Stummer W, Glas M, Herrlinger U. Quality of life in the GLARIUS trial randomizing bevacizumab/irinotecan versus temozolomide in newly diagnosed, MGMT-nonmethylated glioblastoma. *Neuro Oncol*. 2018 Jun 18;20(7):975-985. doi: 10.1093/neuonc/nox204. PubMed PMID: 29121274; PubMed Central PMCID: PMC6007398.

21: Krüger MT, Coenen VA, Egger K, Shah M, Reinacher PC. Development of a Standardized Cranial Phantom for Training and Optimization of Functional Stereotactic Operations. *Stereotact Funct Neurosurg*. 2018 Jun 13:1-7. doi: 10.1159/000489581. [Epub ahead of print] PubMed PMID: 29898460.

22: Glanz Iljina O, Derix J, Kaur R, Schulze-Bonhage A, Auer P, Aertsen A, Ball T. Real-life speech production and perception have a shared premotor-cortical substrate. *Sci Rep*. 2018 Jun 11;8(1):8898. doi: 10.1038/s41598-018-26801-x. PubMed PMID: 29891885; PubMed Central PMCID: PMC5995900.

23: Schnell O, Albrecht V, Pfirrmann D, Eigenbrod S, Krebs B, Romagna A, Siller S, Giese A, Tonn JC, Schichor C. MGMT promoter methylation is not correlated with integrin expression in malignant gliomas: clarifying recent clinical trial results. *Med Oncol*. 2018 Jun 7;35(7):103. doi: 10.1007/s12032-018-1162-z. PubMed PMID: 29882028.

24: Roder C, Bürkle E, Ebner FH, Tatagiba M, Ernemann U, Buck A, Meyer PT, Khan N. Estimation of severity of Moyamoya Disease in H(2)(15)O-PET compared to MRI and angiography. *World Neurosurg*.

2018 Jun 7. pii: S1878-8750(18)31117-3. doi: 10.1016/j.wneu.2018.05.163. [Epub ahead of print] PubMed PMID: 29886291.

25: Taschner CA, Süß P, Volz F, Urbach H, Dovi-Akué P, Prinz M. Freiburg Neuropathology Case Conference : A Painless Mass Lesion of the Parietal and Occipital Bones. *Clin Neuroradiol.* 2018 Jun;28(2):301-306. doi: 10.1007/s00062-018-0691-3. PubMed PMID: 29696306.

26: Kilias A, Häussler U, Heining K, Froriep UP, Haas CA, Egert U. Theta frequency decreases throughout the hippocampal formation in a focal epilepsy model. *Hippocampus.* 2018 Jun;28(6):375-391. doi: 10.1002/hipo.22838. Epub 2018 Mar 7. PubMed PMID: 29473981.

27: Völker M, Fiederer LDJ, Berberich S, Hammer J, Behncke J, Kršek P, Tomášek M, Marusič P, Reinacher PC, Coenen VA, Helias M, Schulze-Bonhage A, Burgard W, Ball T. The dynamics of error processing in the human brain as reflected by high-gamma activity in noninvasive and intracranial EEG. *Neuroimage.* 2018 Jun;173:564-579. doi: 10.1016/j.neuroimage.2018.01.059. Epub 2018 Feb 20. PubMed PMID: 29471099.

28: Kammerer R, Göbel-Guénot K, Gerlach J, Gruschke OG, Hennig J, LeVan P, Haas C, Korvink JG. Improved method for MR microscopy of brain tissue cultured with the interface method combined with Lenz lenses. *Magn Reson Imaging.* 2018 May 29;52:24-32. doi: 10.1016/j.mri.2018.05.010. [Epub ahead of print] PubMed PMID: 29857037.

29: Thiele S, Furlanetti L, Pfeiffer LM, Coenen VA, Döbrössy MD. The effects of bilateral, continuous, and chronic Deep Brain Stimulation of the medial forebrain bundle in a rodent model of depression. *Exp Neurol.* 2018 May;303:153-161. doi: 10.1016/j.expneurol.2018.02.002. Epub 2018 Feb 8. PubMed PMID: 29428214.

30: Endres D, Altenmüller DM, Feige B, Maier SJ, Nickel K, Hellwig S, Rausch J, Ziegler C, Domschke K, Doerr JP, Egger K, Tebartz van Elst L. Myoclonic Jerks and Schizophreniform Syndrome: Case Report and Literature Review. *Front Psychiatry.* 2018 May 1;9:161. doi: 10.3389/fpsyg.2018.00161. eCollection 2018. PubMed PMID: 29780332; PubMed Central PMCID: PMC5946012.

31: Rothhammer V, Borucki DM, Tjon EC, Takenaka MC, Chao CC, Ardura-Fabregat A, de Lima KA, Gutiérrez-Vázquez C, Hewson P, Staszewski O, Blain M, Healy L, Neziraj T, Borio M, Wheeler M, Dragin LL, Laplaud DA, Antel J, Alvarez JI, Prinz M, Quintana FJ. Microglial control of astrocytes in response to microbial metabolites. *Nature.* 2018 May;557(7707):724-728. doi: 10.1038/s41586-018-0119-x. Epub 2018 May 16. PubMed PMID: 29769726.

32: Gkika E, Bettinger D, Krafft L, Schultheiss M, Neeff HP, Maruschke L, Schulenburg M, Adebahr S, Kirste S, Nestle U, Thimme R, Grosu AL, Brunner TB. The role of albumin-bilirubin grade and inflammation-based index in patients with hepatocellular carcinoma treated with stereotactic body radiotherapy. *Strahlenther Onkol.* 2018 May;194(5):403-413. doi: 10.1007/s00066-017-1256-0. Epub 2018 Jan 10. PubMed PMID: 29322205.

33: Joseph K, Mottaghi S, Christ O, Feuerstein TJ, Hofmann UG. When the Ostrich-Algorithm Fails: Blanking Method Affects Spike Train Statistics. *Front Neurosci.* 2018 Apr 30;12:293. doi: 10.3389/fnins.2018.00293. eCollection 2018. PubMed PMID: 29780301; PubMed Central PMCID: PMC5946007.

34: O'Shea DJ, Kalanithi P, Ferenczi EA, Hsueh B, Chandrasekaran C, Goo W, Diester I, Ramakrishnan C, Kaufman MT, Ryu SI, Yeom KW, Deisseroth K, Shenoy KV. Development of an optogenetic toolkit for neural circuit dissection in squirrel monkeys. *Sci Rep.* 2018 Apr 30;8(1):6775. doi: 10.1038/s41598-018-24362-7. PubMed PMID: 29712920; PubMed Central PMCID: PMC5928036.

- 35: Diamandis E, Gabriel CPS, Würtemberger U, Guggenberger K, Urbach H, Staszewski O, Lassmann S, Schnell O, Grauvogel J, Mader I, Heiland DH. MR-spectroscopic imaging of glial tumors in the spotlight of the 2016 WHO classification. *J Neurooncol.* 2018 Apr 27. doi: 10.1007/s11060-018-2881-x. [Epub ahead of print] PubMed PMID: 29704080.
- 36: Pinnell RC, Pereira de Vasconcelos A, Cassel JC, Hofmann UG. A Miniaturized, Programmable Deep-Brain Stimulator for Group-Housing and Water Maze Use. *Front Neurosci.* 2018 Apr 12;12:231. doi: 10.3389/fnins.2018.00231. eCollection 2018. PubMed PMID: 29706862; PubMed Central PMCID: PMC5906879.
- 37: Kogias E, Altenmüller DM, Klingler JH, Schmeiser B, Urbach H, Doostkam S. Histopathology of 3 Tesla MRI-negative extratemporal focal epilepsies. *J Clin Neurosci.* 2018 Apr;50:232-236. doi: 10.1016/j.jocn.2018.01.071. PubMed PMID: 29422363.
- 38: Heiland DH, Gaebelein A, Börries M, Wörner J, Pompe N, Franco P, Heynckes S, Bartholomae M, hAilín DÓ, Carro MS, Prinz M, Weber S, Mader I, Delev D, Schnell O. Microenvironment-Derived Regulation of HIF Signaling Drives Transcriptional Heterogeneity in Glioblastoma Multiforme. *Mol Cancer Res.* 2018 Apr;16(4):655-668. doi: 10.1158/1541-7786.MCR-17-0680. Epub 2018 Jan 12. PubMed PMID: 29330292.
- 39: Jabbarli R, Dinger TF, Darkwah Oppong M, Pierscianek D, Dammann P, Wrede KH, Kaier K, Köhrmann M, Forsting M, Kleinschmitz C, Sure U. Risk Factors for and Clinical Consequences of Multiple Intracranial Aneurysms: A Systematic Review and Meta-Analysis. *Stroke.* 2018 Apr;49(4):848-855. doi: 10.1161/STROKEAHA.117.020342. Epub 2018 Mar 6. PubMed PMID: 29511128.
- 40: Delev D, Oehl B, Steinhoff BJ, Nakagawa J, Scheiwe C, Schulze-Bonhage A, Zentner J. Surgical Treatment of Extratemporal Epilepsy: Results and Prognostic Factors. *Neurosurgery.* 2018 Mar 30. doi: 10.1093/neuros/nyy099. [Epub ahead of print] PubMed PMID: 29618099.
- 41: Heiss JD, Jarvis K, Smith RK, Eskioglu E, Gierthmuehlen M, Patronas NJ, Butman JA, Argersinger DP, Lonser RR, Oldfield EH. Origin of Syrinx Fluid in Syringomyelia: A Physiological Study. *Neurosurgery.* 2018 Mar 30. doi: 10.1093/neuros/nyy072. [Epub ahead of print] PubMed PMID: 29618081.
- 42: Gory B, Haussen DC, Piotin M, Steglich-Arnholm H, Holtmannspötter M, Labreuche J, Kyheng M, Taschner C, Eiden S, Nogueira RG, Papanagiotou P, Bouthakova M, Siddiqui AH, Lapergue B, Dorn F, Cognard C, Killer M, Mangiafico S, Ribo M, Psychogios MN, Spiotta AM, Labeyrie MA, Biondi A, Mazighi M, Turjman F; Thrombectomy In TANdem lesions (TITAN) investigators. Impact of intravenous thrombolysis and emergent carotid stenting on reperfusion and clinical outcomes in patients with acute stroke with tandem lesion treated with thrombectomy: a collaborative pooled analysis. *Eur J Neurol.* 2018 Mar 25. doi: 10.1111/ene.13633. [Epub ahead of print] PubMed PMID: 29575634.
- 43: Capper D, Jones DTW, Sill M, Hovestadt V, Schrimpf D, Sturm D, Koelsche C, Sahm F, Chavez L, Reuss DE, Kratz A, Wefers AK, Huang K, Pajtler KW, Schweizer L, Stichel D, Olar A, Engel NW, Lindenberg K, Harter PN, Braczynski AK, Plate KH, Dohmen H, Garvalov BK, Coras R, Hölsken A, Hewer E, Bewerunge-Hudler M, Schick M, Fischer R, Beschorner R, Schittenhelm J, Staszewski O, Wani K, Varlet P, Pages M, Temming P, Lohmann D, Selt F, Witt H, Milde T, Witt O, Aronica E, Giangaspero F, Rushing E, Scheurlen W, Geisenberger C, Rodriguez FJ, Becker A, Preusser M, Haberler C, Bjerkvig R, Cryan J, Farrell M, Deckert M, Hench J, Frank S, Serrano J, Kannan K, Tsirigos A, Brück W, Hofer S, Brehmer S, Seiz-Rosenhagen M, Hänggi D, Hans V, Rozsnoki S, Hansford JR, Kohlhof P, Kristensen BW, Lechner M, Lopes B, Mawrin C, Ketter R, Kulozik A, Khatib Z, Heppner F, Koch A, Jouvet A, Keohane C, Mühlleisen H, Mueller W, Pohl U, Prinz M, Benner A, Zapata M, Gottardo NG, Driever PH, Kramm CM, Müller HL, Rutkowski S, von Hoff K, Frühwald MC, Gnekow A, Fleischhack G, Tippelt S, Calaminus G,

Monoranu CM, Perry A, Jones C, Jacques TS, Radlwimmer B, Gessi M, Pietsch T, Schramm J, Schackert G, Westphal M, Reifenberger G, Wesseling P, Weller M, Collins VP, Blümcke I, Bendszus M, Debus J, Huang A, Jabado N, Northcott PA, Paulus W, Gajjar A, Robinson GW, Taylor MD, Jaunmuktane Z, Ryzhova M, Platten M, Unterberg A, Wick W, Karajannis MA, Mittelbronn M, Acker T, Hartmann C, Aldape K, Schüller U, Buslei R, Lichter P, Kool M, Herold-Mende C, Ellison DW, Hasselblatt M, Snuderl M, Brandner S, Korshunov A, von Deimling A, Pfister SM. DNA methylation-based classification of central nervous system tumours. *Nature*. 2018 Mar 22;555(7697):469-474. doi: 10.1038/nature26000. Epub 2018 Mar 14. PubMed PMID: 29539639.

44: Coenen VA, Schumacher LV, Kaller C, Schlaepfer TE, Reinacher PC, Egger K, Urbach H, Reisert M. The anatomy of the human medial forebrain bundle: Ventral tegmental area connections to reward-associated subcortical and frontal lobe regions. *Neuroimage Clin*. 2018 Mar 18;18:770-783. doi: 10.1016/j.nicl.2018.03.019. eCollection 2018. PubMed PMID: 29845013; PubMed Central PMCID: PMC5964495.

45: Tomov N, Surchev L, Wiedenmann C, Döbrössy MD, Nikkhah G. Astrogliosis has Different Dynamics after Cell Transplantation and Mechanical Impact in the Rodent Model of Parkinson's Disease. *Balkan Med J*. 2018 Mar 15;35(2):141-147. doi: 10.4274/balkanmedj.2016.1911. Epub 2017 Oct 17. PubMed PMID: 29039346; PubMed Central PMCID: PMC5863251.

46: Gröbner SN, Worst BC, Weischenfeldt J, Buchhalter I, Kleinheinz K, Rudneva VA, Johann PD, Balasubramanian GP, Segura-Wang M, Brabetz S, Bender S, Hutter B, Sturm D, Pfaff E, Hübschmann D, Zipprich G, Heinold M, Eils J, Lawerenz C, Erkek S, Lambo S, Waszak S, Blattmann C, Borkhardt A, Kuhlen M, Eggert A, Fulda S, Gessler M, Wegert J, Kappler R, Baumhoer D, Burdach S, Kirschner-Schwabe R, Kontny U, Kulozik AE, Lohmann D, Hettmer S, Eckert C, Bielack S, Nathrath M, Niemeyer C, Richter GH, Schulte J, Siebert R, Westermann F, Molenaar JJ, Vassal G, Witt H; ICGC PedBrain-Seq Project; ICGC MMML-Seq Project, Burkhardt B, Kratz CP, Witt O, van Tilburg CM, Kramm CM, Fleischhack G, Dirksen U, Rutkowski S, Frühwald M, von Hoff K, Wolf S, Klingebiel T, Koscielniak E, Landgraf P, Koster J, Resnick AC, Zhang J, Liu Y, Zhou X, Waanders AJ, Zwijnenburg DA, Raman P, Brors B, Weber UD, Northcott PA, Pajtler KW, Kool M, Piro RM, Korbel JO, Schlesner M, Eils R, Jones DTW, Lichter P, Chavez L, Zapata M, Pfister SM. The landscape of genomic alterations across childhood cancers. *Nature*. 2018 Mar 15;555(7696):321-327. doi: 10.1038/nature25480. Epub 2018 Feb 28. Erratum in: *Nature*. 2018 Jul;559(7714):E10. PubMed PMID: 29489754.

47: Lehtimäki K, Coenen VA, Gonçalves Ferreira A, Boon P, Elger C, Taylor RS, Ryvlin P, Gil-Nagel A, Gielen F, Brionne TC, Abouihia A, Beth G; MORE investigators. The Surgical Approach to the Anterior Nucleus of Thalamus in Patients With Refractory Epilepsy: Experience from the International Multicenter Registry (MORE). *Neurosurgery*. 2018 Mar 15. doi: 10.1093/neuros/nyy023. [Epub ahead of print] PubMed PMID: 29554309.

48: Anto Michel N, Colberg C, Buscher K, Sommer B, Pramod AB, Ehinger E, Dufner B, Hoppe N, Pfeiffer K, Marchini T, Willecke F, Stachon P, Hilgendorf I, Heidt T, von Zur Muhlen C, von Elverfeldt D, Pfeifer D, Schüle R, Kintscher U, Brachs S, Ley K, Bode C, Zirlik A, Wolf D. Inflammatory Pathways Regulated by Tumor Necrosis Receptor-Associated Factor 1 Protect From Metabolic Consequences in Diet-Induced Obesity. *Circ Res*. 2018 Mar 2;122(5):693-700. doi: 10.1161/CIRCRESAHA.117.312055. Epub 2018 Jan 22. PubMed PMID: 29358227; PubMed Central PMCID: PMC5834385.

49: Delev D, Schramm J, Clusmann H. How I do it - selective amygdalohippocampectomy via a navigated temporobasal approach, when veins forbid elevation of the temporal lobe. *Acta Neurochir (Wien)*. 2018 Mar;160(3):597-601. doi: 10.1007/s00701-017-3386-7. Epub 2017 Nov 16. PubMed PMID: 29147777.

- 50: Kogias E, Evangelou P, Schmeiser B, Reinacher PC, Altenmüller DM. The oxymoron of image-guided resection in 3 T MRI-negative extratemporal epilepsy: Technique and postoperative results. *Clin Neurol Neurosurg.* 2018 Mar;166:16-22. doi: 10.1016/j.clineuro.2018.01.017. Epub 2018 Jan 20. PubMed PMID: 29358107.
- 51: Nakagawa JM, Trippel M, Doostkam S, Mader I, Coenen VA, Reinacher PC. The stereotactic suboccipitaltranscerebellar approach to lesions of the brainstem and the cerebellum. *Clin Neurol Neurosurg.* 2018 Mar;166:10-15. doi: 10.1016/j.clineuro.2018.01.015. Epub 2018 Jan 19. PubMed PMID: 29358106.
- 52: Taschner CA, Süß P, Hohenhaus M, Urbach H, Lützen N, Prinz M. Freiburg Neuropathology Case Conference : Tumor Located in the Anterior Portion of the Third Ventricle. *Clin Neuroradiol.* 2018 Mar;28(1):139-143. doi: 10.1007/s00062-018-0668-2. PubMed PMID: 29392346.
- 53: Kotecha D, Breithardt G, Camm AJ, Lip GYH, Schotten U, Ahlsson A, Arnar D, Atar D, Auricchio A, Bax J, Benussi S, Blomstrom-Lundqvist C, Borggrefe M, Boriani G, Brandes A, Calkins H, Casadei B, Castellá M, Chua W, Crijns H, Dobrev D, Fabritz L, Feuring M, Freedman B, Gerth A, Goette A, Guasch E, Haase D, Hatem S, Haeusler KG, Heidbuchel H, Hendriks J, Hunter C, Kääb S, Kespoli S, Landmesser U, Lane DA, Lewalter T, Mont L, Nabauer M, Nielsen JC, Oeff M, Oldgren J, Oto A, Pison L, Potpara T, Ravens U, Richard-Lordereau I, Rienstra M, Savelieva I, Schnabel R, Sinner MF, Sommer P, Themistoclakis S, Van Gelder IC, Vardas PE, Verma A, Wakili R, Weber E, Werring D, Willems S, Ziegler A, Hindricks G, Kirchhof P. Integrating new approaches to atrial fibrillation management: the 6th AFNET/EHRA Consensus Conference. *Europace.* 2018 Mar 1;20(3):395-407. doi: 10.1093/europace/eux318. PubMed PMID: 29300976.
- 54: Schmeiser B, Steinhoff BJ, Schulze-Bonhage A. Does early postoperative drug regimen impact seizure control in patients undergoing temporal lobe resections? *J Neurol.* 2018 Mar;265(3):500-509. doi: 10.1007/s00415-017-8700-z. Epub 2018 Jan 6. PubMed PMID: 29307009.
- 55: Grauvogel J, Scheiwe C, Masalha W, Grauvogel T, Kaminsky J, Vasilikos I. Piezosurgery-, neuroendoscopy-, and neuronavigation-assisted intracranial approach for removal of a recurrent petrous apex cholesteatoma: technical note. *J Neurosurg Pediatr.* 2018 Mar;21(3):322-328. doi: 10.3171/2017.8.PEDS17327. Epub 2017 Dec 22. PubMed PMID: 29271730.
- 56: Lhomée E, Wojtecki L, Czernecki V, Witt K, Maier F, Tonder L, Timmermann L, Hälbig TD, Pineau F, Durif F, Witjas T, Pinsker M, Mehdorn M, Sixel-Döring F, Kupsch A, Krüger R, Elben S, Chabardès S, Thobois S, Brefel-Courbon C, Ory-Magne F, Regis JM, Maltête D, Sauvaget A, Rau J, Schnitzler A, Schüpbach M, Schade-Brittinger C, Deuschl G, Houeto JL, Krack P; EARLYSTIM study group. Behavioural outcomes of subthalamic stimulation and medical therapy versus medical therapy alone for Parkinson's disease with early motor complications (EARLYSTIM trial): secondary analysis of an open-label randomised trial. *Lancet Neurol.* 2018 Mar;17(3):223-231. doi: 10.1016/S1474-4422(18)30035-8. PubMed PMID: 29452685.
- 57: Spanhel K, Wagner K, Geiger MJ, Ofer I, Schulze-Bonhage A, Metternich B. Flashbulb memories: Is the amygdala central? An investigation of patients with amygdalar damage. *Neuropsychologia.* 2018 Mar;111:163-171. doi: 10.1016/j.neuropsychologia.2018.01.004. Epub 2018 Jan 6. PubMed PMID: 29317322.
- 58: Roelz R, Scheiwe C, Urbach H, Coenen VA, Reinacher P. Stereotactic Catheter Ventriculocisternostomy for Clearance of Subarachnoid Hemorrhage in Patients with Coiled Aneurysms. *Oper Neurosurg (Hagerstown).* 2018 Mar 1;14(3):231-235. doi: 10.1093/ons/opx129. PubMed PMID: 28582545.

- 59: Bewernick BH, Kilian HM, Schmidt K, Reinfeldt RE, Kayser S, Coenen VA, Markett S, Schlaepfer TE. Deep brain stimulation of the supero-lateral branch of the medial forebrain bundle does not lead to changes in personality in patients suffering from severe depression. *Psychol Med.* 2018 Mar 1:1-9. doi: 10.1017/S0033291718000296. [Epub ahead of print] PubMed PMID: 29493478.
- 60: Jabbarli R, Pierscianek D, RÖlz R, Reinhard M, Darkwah Oppong M, Scheiwe C, Dammann P, Kaier K, Wrede KH, Shah M, Zentner J, Sure U. Gradual External Ventricular Drainage Weaning Reduces The Risk of Shunt Dependency After Aneurysmal Subarachnoid Hemorrhage: A Pooled Analysis. *Oper Neurosurg (Hagerstown).* 2018 Feb 26. doi: 10.1093/ons/opy009. [Epub ahead of print] PubMed PMID: 29490068.
- 61: Beier D, Proescholdt M, Reinert C, Pietsch T, Jones DTW, Pfister SM, Hattingen E, Seidel C, Dirven L, Luerding R, Reijneveld J, Warmuth-Metz M, Bonsanto M, Bremer M, Combs SE, Rieken S, Herrlinger U, Kuntze H, Mayer-Steinacker R, Moskopp D, Schneider T, Beringer A, Schlegel U, Stummer W, Welker H, Weyerbrock A, Paulsen F, Rutkowski S, Weller M, Wick W, Kortmann RD, Bogdahn U, Hau P. Multicenter pilot study of radiochemotherapy as first-line treatment for adults with medulloblastoma (NOA-07). *Neuro Oncol.* 2018 Feb 19;20(3):400-410. doi: 10.1093/neuonc/nox155. PubMed PMID: 29016837; PubMed Central PMCID: PMC5817955.
- 62: Kessler T, Sahm F, Sadik A, Stichel D, Hertenstein A, Reifenberger G, Zacher A, Sabel M, Tabatabai G, Steinbach J, Sure U, Krex D, Grosu AL, Bewerunge-Hudler M, Jones D, Pfister SM, Weller M, Opitz C, Bendszus M, von Deimling A, Platten M, Wick W. Molecular differences in IDH wildtype glioblastoma according to MGMT promoter methylation. *Neuro Oncol.* 2018 Feb 19;20(3):367-379. doi: 10.1093/neuonc/nox160. PubMed PMID: 29016808; PubMed Central PMCID: PMC5817966.
- 63: Singh K, Loreth D, Pöttker B, Hefti K, Innos J, Schwald K, Hengstler H, Menzel L, Sommer CJ, Radyushkin K, Kretz O, Philips MA, Haas CA, Frauenknecht K, Lilleväli K, Heimrich B, Vasar E, Schäfer MKE. Neuronal Growth and Behavioral Alterations in Mice Deficient for the Psychiatric Disease-Associated Negr1 Gene. *Front Mol Neurosci.* 2018 Feb 9;11:30. doi: 10.3389/fnmol.2018.00030. eCollection 2018. PubMed PMID: 29479305; PubMed Central PMCID: PMC5811522.
- 64: Wolf D, Anto-Michel N, Blankenbach H, Wiedemann A, Buscher K, Hohmann JD, Lim B, Bäuml M, Marki A, Mauler M, Duerschmied D, Fan Z, Winkels H, Sidler D, Diehl P, Zajonc DM, Hilgendorf I, Stachon P, Marchini T, Willecke F, Schell M, Sommer B, von Zur Muhlen C, Reinöhl J, Gerhardt T, Plow EF, Yakubenko V, Libby P, Bode C, Ley K, Peter K, Zirlik A. A ligand-specific blockade of the integrin Mac-1 selectively targets pathologic inflammation while maintaining protective host-defense. *Nat Commun.* 2018 Feb 6;9(1):525. doi: 10.1038/s41467-018-02896-8. PubMed PMID: 29410422; PubMed Central PMCID: PMC5802769.
- 65: Whelan CD, Altmann A, Botía JA, Jahanshad N, Hibar DP, Absil J, Alhusaini S, Alvim MKM, Auvinen P, Bartolini E, Bergo FPG, Bernardes T, Blackmon K, Braga B, Caligiuri ME, Calvo A, Carr SJ, Chen J, Chen S, Cherubini A, David P, Domin M, Foley S, França W, Haaker G, Isaev D, Keller SS, Kotikalapudi R, Kowalczyk MA, Kuzniecky R, Langner S, Lenge M, Leyden KM, Liu M, Loi RQ, Martin P, Mascalchi M, Morita ME, Pariente JC, Rodríguez-Cruces R, Rummel C, Saavalainen T, Semmelroch MK, Severino M, Thomas RH, Tondelli M, Tortora D, Vaudano AE, Vivash L, von Podewils F, Wagner J, Weber B, Yao Y, Yasuda CL, Zhang G, Bargalló N, Bender B, Bernasconi N, Bernasconi A, Bernhardt BC, Blümcke I, Carlson C, Cavalleri GL, Cendes F, Concha L, Delanty N, Depondt C, Devinsky O, Doherty CP, Focke NK, Gambardella A, Guerrini R, Hamandi K, Jackson GD, Kälviäinen R, Kochunov P, Kwan P, Labate A, McDonald CR, Meletti S, O'Brien TJ, Ourselin S, Richardson MP, Striano P, Thesen T, Wiest R, Zhang J, Vezzani A, Ryten M, Thompson PM, Sisodiya SM. Structural brain abnormalities in the common epilepsies assessed in a worldwide ENIGMA study. *Brain.* 2018 Feb 1;141(2):391-408. doi: 10.1093/brain/awx341. PubMed PMID: 29365066; PubMed Central PMCID: PMC5837616.

- 66: Alimi M, Lang G, Navarro-Ramirez R, Perrech M, Berlin C, Hofstetter CP, Moriguchi Y, Elowitz E, Härtl R. The Impact of Cage Dimensions, Positioning, and Side of Approach in Extreme Lateral Interbody Fusion. *Clin Spine Surg.* 2018 Feb;31(1):E42-E49. doi: 10.1097/BSD.0000000000000507. PubMed PMID: 28319468.
- 67: Hattingen E, Enkirch SJ, Jurcoane A, Kruse M, Delev D, Grote A, Becker A. Hippocampal "gliosis only" on MR imaging represents a distinct entity in epilepsy patients. *Neuroradiology.* 2018 Feb;60(2):161-168. doi: 10.1007/s00234-017-1939-3. Epub 2017 Oct 30. PubMed PMID: 29085967.
- 68: Reinacher PC, Amtage F, Rijntjes M, Piroth T, Prokop T, Jenkner C, Kätzler J, Coenen VA. One Pass Thalamic and Subthalamic Stimulation for Patients with Tremor-Dominant Idiopathic Parkinson Syndrome (OPINION): Protocol for a Randomized, Active-Controlled, Double-Blinded Pilot Trial. *JMIR Res Protoc.* 2018 Jan 30;7(1):e36. doi: 10.2196/resprot.8341. PubMed PMID: 29382631; PubMed Central PMCID: PMC5811645.
- 69: Pinto A, Alfadhel M, Akroyd R, Atik Altinok Y, Bernabei SM, Bernstein L, Bruni G, Caine G, Cameron E, Carruthers R, Cochrane B, Daly A, de Boer F, Delaunay S, Dianin A, Dixon M, Drogari E, Dubois S, Evans S, Gribben J, Gugelmo G, Heidenborg C, Hunjan I, Kok IL, Kumru B, Liguori A, Mayr D, Megdad E, Meyer U, Oliveira RB, Pal A, Pozzoli A, Pretese R, Rocha JC, Rosenbaum-Fabian S, Serrano-Nieto J, Sjoqvist E, Timmer C, White L, van den Hurk T, van Rijn M, Zweers H, Ziadlou M, MacDonald A. International practices in the dietary management of fructose 1-6 biphosphatase deficiency. *Orphanet J Rare Dis.* 2018 Jan 25;13(1):21. doi: 10.1186/s13023-018-0760-3. PubMed PMID: 29370874; PubMed Central PMCID: PMC5785792.
- 70: Smith R, Wang J, Seymour C, Fernandez-Palomo C, Fazzari J, Schültke E, Bräuer-Krisch E, Laissue J, Schroll C, Mothersill C. Homogenous and Microbeam X-Ray Radiation Induces Proteomic Changes in the Brains of Irradiated Rats and in the Brains of Nonirradiated Cage Mate Rats. Dose Response. 2018 Jan 22;16(1):1559325817750068. doi: 10.1177/1559325817750068. eCollection 2018 Jan-Mar. PubMed PMID: 29383012; PubMed Central PMCID: PMC5784471.
- 71: Hilmer LV, Park KB, Vycheth I, Wirsching M. Cerebral Contusion: An Investigation of Etiology, Risk Factors, Related Diagnoses, and the Surgical Management at a Major Government Hospital in Cambodia. *Asian J Neurosurg.* 2018 Jan-Mar;13(1):23-30. doi: 10.4103/ajns.AJNS_342_16. PubMed PMID: 29492116; PubMed Central PMCID: PMC5820890.
- 72: Ehlken C, Böhringer D, Agostini HT, Gründel B, Stech M. Potential selection bias in candidates for stereotactic radiotherapy for neovascular AMD. *Graefes Arch Clin Exp Ophthalmol.* 2018 Jan;256(1):105-111. doi: 10.1007/s00417-017-3849-9. Epub 2017 Nov 22. PubMed PMID: 29168044.
- 73: Kogias E, Altenmüller DM, Klingler JH, Schmeiser B, Urbach H, Doostkam S. Histopathology of 3 Tesla MRI-negative temporal lobe epilepsies. *J Clin Neurosci.* 2018 Jan;47:273-277. doi: 10.1016/j.jocn.2017.10.012. Epub 2017 Oct 15. PubMed PMID: 29042148.
- 74: Masalha W, Heiland DH, Franco P, Delev D, Haaker JG, Schnell O, Scheiwe C, Grauvogel J. Atypical meningioma: progression-free survival in 161 cases treated at our institution with surgery versus surgery and radiotherapy. *J Neurooncol.* 2018 Jan;136(1):147-154. doi: 10.1007/s11060-017-2634-2. Epub 2017 Oct 28. PubMed PMID: 29081038.
- 75: Heers M, Helias M, Hedrich T, Dümpelmann M, Schulze-Bonhage A, Ball T. Spectral bandwidth of interictal fast epileptic activity characterizes the seizure onset zone. *Neuroimage Clin.* 2017 Nov 26;17:865-872. doi: 10.1016/j.nic.2017.11.021. eCollection 2018. PubMed PMID: 29527491; PubMed Central PMCID: PMC5842664.

Dr. [Helmut Bertalanffy](#) is Professor of Neurological Surgery and Director of the Center for Vascular Neurosurgery at the [International Neuroscience Institute, Hannover, Germany](#). He received his neurosurgical training from the Albert-Ludwigs University of [Freiburg](#) im Breisgau, Germany, where he completed with honors a Medical Doctorate in 1986 and obtained the qualification as board certified neurosurgeon in 1990.

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