June 2020 News **PLEASE FORWARD TO YOUR COLLEAGUES** **www.wikistim.org**

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FROM ONE MONTH TO THE NEXT

Last month's newsletter was devoted to COVID-19, which has dominated the news, disrupted all of our lives, marshalled public health and medical resources, and preempted elective neuromodulation procedures. On a daily basis, we have been bombarded with news stories, ranging from ominous (indeed, we have lost friends and colleagues to the disease) to reassuring (many, perhaps most cases are asymptomatic). Some of the reports are inconsistent and even contradictory, as is to be expected in a rapidly advancing field, and the news media (a business after all) cannot be relied upon to resolve them and foster thoughtful discussion, even as difficult decisions must be made.

What is the quality of the evidence and analysis that informs these decisions? The medical literature in general, even highly cited clinical research publicized in leading news stories, often proves to be exaggerated or even incorrect (1). Indeed, the same is proving to be true of COVID-19 (2). Do decision makers have rapid and easy access to pertinent information?

WIKISTIM is dedicated to providing up-to-date, comprehensive evidence in the field of neuromodulation (3). We have been developing this resource in isolation, but our methods might be adapted readily to other fields. To our knowledge, no comparable resource exists for the medical literature in general.

As we noted in our 2018 paper (3), a web-based process of reporting study results in an easily accessible format " . . . is in use for registries of clinical trials such as ClinicalTrials.gov [which as of today reports 1915 COVID-19 studies] and PROSPERO [a database of prospectively registered protocols of systematic reviews, currently focusing on COVID-19 studies] (4,5), which are beginning to post [study] results as they become available, but which at present lack the structure and detail of WIKISTIM."

We have much still to learn, and even as we are learning we must make difficult decisions.
If we follow the so-called "precautionary principle" and avoid all potential harm, is the cure worse than the disease? We salute our colleagues who remain on the front lines, and those whose decisions guide public policy. They deserve prompt, comprehensive access to new, potentially critical information.

(1) Ioannidis JPA. Contradicted and initially stronger effects in highly cited clinical research, JAMA 294(2):218-228, 2005.
(2) Ioannidis JPA. Coronavirus disease 2019: The harms of exaggerated information and non-evidence-

based measures. Eur J Clin Invest 2020:50:e13222
(3) North RB, Shipley J. WIKISTIM.org: An on-line database of published neurostimulation studies. Neuromodulation 21(8):828-836, 2018.
(4) https://www.clinicaltrials.gov
(5) https://www.crd.york.ac.uk/prospero/

THANK YOU TO DR. SLAVIN

We are grateful for the generous donation to support WIKISTIM from Dr. Konstantin Slavin, who is a member of our editorial board and promotes WIKISTIM whenever he gives a lecture!

JUNE 2020 STATISTICS

Membership

In May, the number of our subscribers grew to 1245. Thank you for helping to spread the word!

Number of citations in each section

- DBS 5490, with 2 completed WIKISTIM abstracts
- DRG 129, with 9 completed WIKISTIM abstracts
- GES 499
- PNS 59 (limited to peripheral nerve field stimulation)
- SCS 2505 with 132 completed or partially completed WIKISTIM abstracts
- SNS 1006

CITATIONS ADDED FROM SEARCH ON MAY 28, 2020

The list of citations that received the most-clicks in previous newsletters follows this citation list.

DBS

1. Adair DSP, Gomes KS, Kiss ZHT, Gobbi DG, Starreveld YP. Tactics: an open-source platform for planning, simulating and validating stereotactic surgery. Comput Assist Surg (Abingdon) 2020 25(1):1-14 https://pubmed.ncbi.nlm.nih.gov/32401082 https://www.tandfonline.com/doi/full/10.1080/24699322.2020.1760354
2. Al-Ozzi TM, Botero-Posada LF, Lopez Rios AL, Hutchison WD. Single unit and beta oscillatory activities in subthalamic nucleus are modulated during visual choice preference. Eur J Neurosci 2020 epub https://pubmed.ncbi.nlm.nih.gov/32378745
3. Andrade P, Heiden P, Hoevels M, Schlamann M, Baldermann JC, Huys D, Visser-Vandewalle V. Modulation of fibers to motor cortex during thalamic dbs in tourette patients correlates with tic reduction. Brain Sci 2020 10(5):E302 https://pubmed.ncbi.nlm.nih.gov/32429216 https://www.mdpi.com/2076-3425/10/5/302/htm
4. Bellini G, Best LA, Brechany U, Mills R, Pavese N. Clinical impact of deep brain stimulation on the autonomic system in patients with Parkinson's disease. Mov Disord Clin Pract 2020 7(4):373-382 https://pubmed.ncbi.nlm.nih.gov/32373653
5. Bolier E, Bot M, van den Munckhof P, Pal G, Sani S, Stebbins GT, Metman LV. Kinesthetic cells within the subthalamic nucleus and deep brain stimulation for Parkinson's disease. World Neurosurg 2020 epub https://pubmed.ncbi.nlm.nih.gov/32371080
6. Bos MJ, Alzate Sanchez AM, Bancone R, Temel Y, de Greef BTA, Absalom AR, Gommer ED, van Kranen-Mastenbroek VHJM, Buhre WF, Roberts MJ, Janssen MLF. Influence of anesthesia and clinical variables on the firing rate, coefficient of variation and multi-unit activity of the subthalamic nucleus in patients with Parkinson's disease. J Clin Med 2020 9(4):E1229 https://pubmed.ncbi.nlm.nih.gov/32344572 https://www.mdpi.com/2077-0383/9/4/1229/htm
7. Bucurenciu I, Staack AM, Gharabaghi A, Steinhoff BJ. High-frequency electrical stimulation of the

anterior thalamic nuclei increases vigilance in epilepsy patients during relaxed and drowsy wakefulness. Epilepsia 2020 epub https://pubmed.ncbi.nlm.nih.gov/32385944
8. Casamento-Moran A, Yacoubi B, Wilkes BJ, Hess CW, Foote KD, Okun MS, Shukla A, Vaillancourt DE, Christou EA. Quantitative separation of tremor and ataxia in essential tremor. Ann Neurol 2020 epub https://pubmed.ncbi.nlm.nih.gov/32418250
9. Cebi I, Scholten M, Gharabaghi A, Weiss D. Clinical and kinematic correlates of favorable gait outcomes from subthalamic stimulation. Front Neurol 2020 epub 11:212 https://pubmed.ncbi.nlm.nih.gov/32431656 https://www.frontiersin.org/articles/10.3389/fneur.2020.00212/full
10. Cho S, Min HK, In MH, Jo HJ. Multivariate pattern classification on BOLD activation pattern induced by deep brain stimulation in motor, associative, and limbic brain networks. Sci Rep 2020 10(1):7528 https://pubmed.ncbi.nlm.nih.gov/32372021 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7200672/
11. Choo XY, Lim SY, Chinna K, Tan YJ, Yong VW, Lim JL, Lau KF, Chung JY, Em JM, Tan HT, Lim JH, Tan SB, Tan CT, Tan AH. Understanding patients' and caregivers' perspectives and educational needs in Parkinson's disease: a multi-ethnic Asian study. Neurol Sci 2020 epub https://pubmed.ncbi.nlm.nih.gov/32314118
12. Clark DL, Johnson KA, Butson CR, Lebel C, Gobbi D, Ramasubbu R, Kiss ZHT. Tract-based analysis of target engagement by subcallosal cingulate deep brain stimulation for treatment resistant depression. Brain Stimul 2020 13(4):1094-1101 https://pubmed.ncbi.nlm.nih.gov/32417668 https://www.brainstimjrnl.com/article/S1935-861X(20)30059-0/pdf
13. De Marco R, Bhargava D, Macerollo A, Osman-Farah J. Could ZI have a role in DBS for Parkinson's disease? An observational study to optimize DBS target localization. J Clin Neurosci 2020 epub https://pubmed.ncbi.nlm.nih.gov/32402608
14. Diaz A, Cajigas I, Cordeiro JG, Mahavadi A, Sur S, Di Luca DG, Shpiner DS, Luca CC, Jagid JR. Individualized anatomy-based targeting for VIM-cZI DBS in essential tremor. World Neurosurg 2020 epub https://pubmed.ncbi.nlm.nih.gov/32438003
15. DiMarzio M, Madhavan R, Joel S, Hancu I, Fiveland E, Prusik J, Gillogly M, Rashid T, MacDonell J, Ashe J, Telkes I, Feustel P, Staudt MD, Shin DS, Durphy J, Hwang R, Hanspal E, Pilitsis JG. Use of functional magnetic resonance imaging to assess how motor phenotypes of Parkinson's disease respond to deep brain stimulation. Neuromodulation 2020 epub https://pubmed.ncbi.nlm.nih.gov/32369255 https://onlinelibrary.wiley.com/doi/epdf/10.1111/ner.13160
16. Fabbri M, Zibetti M, Rizzone MG, Giannini G, Borellini L, Stefani A, Bove F, Bruno A, Calandra-Buonaura G, Modugno N, Piano C, Peppe A, Ardolino G, Romagnolo A, Artusi CA, Berchialla P, Montanaro E, Cortelli P, Luigi R, Eleopra R, Minafra B, Pacchetti C, Tufo T, Cogiamanian F, Lopiano L. Should we consider deep brain stimulation discontinuation in late-stage Parkinson's disease? Mov Disord 2020 epub https://pubmed.ncbi.nlm.nih.gov/32449542
17. Fridgeirsson EA, Figee M, Luigjes J, van den Munckhof P, Schuurman PR, van Wingen G, Denys D. Deep brain stimulation modulates directional limbic connectivity in obsessive-compulsive disorder. Brain 2020 143(5):1603-1612 https://pubmed.ncbi.nlm.nih.gov/32352147 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7241947/
18. Gilbert F, Lancelot M. Incoming ethical issues for deep brain stimulation: when long-term treatment leads to a 'new form of the disease'. J Med Ethics 2020 epub https://pubmed.ncbi.nlm.nih.gov/32409626
19. Gomez-Inhiesto E, Acaiturri-Ayesta MT, Ustarroz-Aguirre I, Camahuali D, Urtaran-Laresgoiti M, Basabe-Aldecoa M, Nuño-Solinís R, Urizar E. Direct cost of Parkinson's disease: a real-world data study of second-line therapies. Parkinsons Dis 2020 epub https://pubmed.ncbi.nlm.nih.gov/32454967

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7240660/
20. Guo W, Koo BB, Kim JH, Bhadelia RA, Seo DW, Hong SB, Joo EY, Lee S, Lee JI, Cho KR, Shon YM. Defining the optimal target for anterior thalamic deep brain stimulation in patients with drug-refractory epilepsy. J Neurosurg 2020 epub 1-10 https://pubmed.ncbi.nlm.nih.gov/32384279
21. Holewijn RA, Bot M, van den Munckhof P, Schuurman PR. Implementation of intraoperative cone-beam computed tomography (O-arm) for stereotactic imaging during deep brain stimulation procedures. Oper Neurosurg (Hagerstown) 2020 epub https://pubmed.ncbi.nlm.nih.gov/32392290
22. Horn MA, Gulberti A, Gülke E, Buhmann C, Gerloff C, Moll CKE, Hamel W, Volkmann J, Pötter-Nerger M. A new stimulation mode for deep brain stimulation in Parkinson's disease: theta burst stimulation. Mov Disord 2020 epub https://pubmed.ncbi.nlm.nih.gov/32357269
23. Hui D, Murgai AA, Gilmore G, Mohideen SI, Parrent AG, Jog MS. Assessing the effect of current steering on the total electrical energy delivered and ambulation in Parkinson's disease. Sci Rep 2020 10(1):8256 https://pubmed.ncbi.nlm.nih.gov/32427934 https://www.nature.com/articles/s41598-020-64250-7
24. Jost ST, Sauerbier A, Visser-Vandewalle V, Ashkan K, Silverdale M, Evans J, Loehrer PA, Rizos A, Petry-Schmelzer JN, Reker P, Fink GR, Franklin J, Samuel M, Schnitzler A, Barbe MT, Antonini A, Martinez-Martin P, Timmermann L, Ray-Chaudhuri K, Dafsari HS; EUROPAR and the International Parkinson and Movement Disorders Society Non-Motor Parkinson's Disease Study Group. A prospective, controlled study of non-motor effects of subthalamic stimulation in Parkinson's disease: results at the 36-month follow-up. J Neurol Neurosurg Psychiatry 2020 epub https://pubmed.ncbi.nlm.nih.gov/32371534
25. Kuhn J, Baldermann JC. Elucidating neural network changes induced by deep brain stimulation for OCD. Brain 2020 143(5):1293-1296 https://pubmed.ncbi.nlm.nih.gov/32438409
26. Leimbach F, Atkinson-Clement C, Wilkinson L, Cheung C, Jahanshahi M. Dissociable effects of subthalamic nucleus deep brain stimulation surgery and acute stimulation on verbal fluency in Parkinson's disease. Behav Brain Res 2020 388:112621 https://pubmed.ncbi.nlm.nih.gov/32353395
27. Li C, Fan X, Hong J, Roberts DW, Aronson JP, Paulsen KD. Model-based image updating for brain shift in deep brain stimulation electrode placement surgery. IEEE Trans Biomed Eng 2020 epub https://pubmed.ncbi.nlm.nih.gov/32340934
28. Li H, Liang S, Yu Y, Wang Y, Cheng Y, Yang H, Tong X. Clinical experience of comprehensive treatment on the balance function of Parkinson's disease. Medicine (Baltimore) 2020 99(19):e20154 https://pubmed.ncbi.nlm.nih.gov/32384503 https://journals.lww.com/md-journal/FullText/2020/05080/Clinical_experience_of_comprehensive_treatment_on.80.aspx
29. Li H, McConnell GC. Intraoperative microelectrode recordings in substantia nigra pars reticulata in anesthetized rats. Front Neurosci 2020 epub 14:367 https://pubmed.ncbi.nlm.nih.gov/32410946 https://www.frontiersin.org/articles/10.3389/fnins.2020.00367/full
30. Li SJ, Lo YC, Lai HY, Lin SH, Lin HC, Lin TC, Chang CW, Chen TC, Chin-Jung Hsieh C, Yang SH, Chiu FM, Kuo CH, Chen YY. Uncovering the modulatory interactions of brain networks in cognition with central thalamic deep brain stimulation using functional magnetic resonance imaging. Neuroscience 2020 epub https://pubmed.ncbi.nlm.nih.gov/32446855
31. Mankin EA, Fried I. Modulation of human memory by deep brain stimulation of the entorhinal-hippocampal circuitry. Neuron 2020 106(2):218-235 https://pubmed.ncbi.nlm.nih.gov/32325058
32. Milosevic L, Scherer M, Cebi I, Guggenberger R, Machetanz K, Naros G, Weiss D, Gharabaghi A. Online mapping with the deep brain stimulation lead: a novel targeting tool in Parkinson's disease. Mov Disord 2020 epub https://pubmed.ncbi.nlm.nih.gov/32424887
33. Monteferrante NR, Wilhelmi BG, Lambert M, Ponce FA. Effects of implantation of a deep brain

stimulation device on patient weight in Parkinson's disease and essential tremor. J Neurosurg 2020 epub 1-7 https://pubmed.ncbi.nlm.nih.gov/32442969
34. Mosley PE, Robinson K, Dissanayaka NN, Coyne T, Silburn P, Marsh R, Pye D. A pilot trial of cognitive behavioral therapy for caregivers after deep brain stimulation for Parkinson's disease. J Geriatr Psychiatry Neurol 2020 epub https://pubmed.ncbi.nlm.nih.gov/32400266
35. Mottaghi S, Afshari N, Buchholz O, Liebana S, Hofmann UG. Modular current stimulation system for pre-clinical studies. Front Neurosci 2020 epub 14:408 https://pubmed.ncbi.nlm.nih.gov/32425752 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7203490/
36. Negri M, Gorgora M, Nasser JA, Salles JI, Teixeira S, Arias-Carrión O, Junqueira J, Nicoliche E, Velasques B, Cagy M, Budde H, Basile LF, Orsini M, Friede R, Bastos VH, Ribeiro P. Neurophysiological changes after cognitive-motor tasks in Parkinson's disease patients with deep brain stimulation. Funct Neurol 2019 34(3):177-187 https://pubmed.ncbi.nlm.nih.gov/32453999 https://www.functionalneurology.com/common/php/portiere.php?ID=4836d65afc669f95122db3dd74ff8def
37. Ng JH, See AAQ, Xu Z, King NKK. Longitudinal medication profile and cost savings in Parkinson's disease patients after bilateral subthalamic nucleus deep brain stimulation. J Neurol 2020 epub https://pubmed.ncbi.nlm.nih.gov/32367298
38. O'Day J, Syrkin-Nikolau J, Anidi C, Kidzinski L, Delp S, Bronte-Stewart H. The turning and barrier course reveals gait parameters for detecting freezing of gait and measuring the efficacy of deep brain stimulation. PLOS One 2020 15(4):e0231984 https://pubmed.ncbi.nlm.nih.gov/32348346 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7190141/
39. Oterdoom DLM, Lok R, van Beek AP, den Dunnen WFA, Emous M, van Dijk JMC, van Dijk G. Deep brain stimulation in the nucleus accumbens for binge eating disorder: a study in rats. Obes Surg 2020 epub https://pubmed.ncbi.nlm.nih.gov/32451916 https://link.springer.com/content/pdf/10.1007/s11695-020-04697-9.pdf
40. Ozturk M, Kaku H, Jimenez-Shahed J, Viswanathan A, Sheth SA, Kumar S, Ince NF. Subthalamic single cell and oscillatory neural dynamics of a dyskinetic medicated patient with Parkinson's disease. Front Neurosci 2020 epub 14:391 https://pubmed.ncbi.nlm.nih.gov/32390796 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7193777/
41. Painous C, van Os N, Delamarre A, Michailoviene I, Marti MJ, van de Warrenburg BP, Meissner WG, Utkus A, Reinhard C, Graessner H, Tijssen M. Management of rare movement disorders in Europe: outcome of surveys of the European Reference Network for Rare Neurological Diseases. Eur J Neurol 2020 epub https://pubmed.ncbi.nlm.nih.gov/32386078 https://onlinelibrary.wiley.com/doi/epdf/10.1111/ene.14302
42. Parker T, Huang Y, Gong C, Chen Y, Wang S, Green AL, Aziz T, Li L. Pain-induced beta activity in the subthalamic nucleus of Parkinson's disease. Stereotact Funct Neurosurg 2020 epub 1-7 https://pubmed.ncbi.nlm.nih.gov/32348997
43. Pedro T, Sousa M, Rito M, Pereira R, Januário C, Moreira F. The impact of deep brain stimulation on the sexual function of patients with Parkinson's disease. Neurologist 2020 25(3):55-61 https://pubmed.ncbi.nlm.nih.gov/32358462
44. Perides S, Lin JP, Lee G, Gimeno H, Lumsden DE, Ashkan K, Selway R, Kaminska M. Deep brain stimulation reduces pain in children with dystonia, including in dyskinetic cerebral palsy. Dev Med Child Neurol 2020 epub https://pubmed.ncbi.nlm.nih.gov/32386250
45. Pol S, Temel Y, Jahanshahi A. A custom made electrode construct and reliable implantation method that allows for long-term bilateral deep brain stimulation in mice. Neuromodulation 2020 epub https://pubmed.ncbi.nlm.nih.gov/32385967 https://onlinelibrary.wiley.com/doi/epdf/10.1111/ner.13165
46. Ren L, Yu T, Wang D, Wang X, Ni D, Zhang G, Bartolomei F, Wang Y, Li Y. Subthalamic nucleus

stimulation modulates motor epileptic activity in humans. Ann Neurol 2020 epub https://pubmed.ncbi.nlm.nih.gov/32396256
47. Riva-Posse P, Crowell AL, Wright K, Waters AC, Choi K, Garlow SJ, Holtzheimer PE, Gross RE, Mayberg HS. Rapid antidepressant effects of deep brain stimulation and their relation to surgical protocol. Biol Psychiatry 2020 epub https://pubmed.ncbi.nlm.nih.gov/32418613
48. Sarac ET, Yilmaz A, Aydinli FE, Yildizgoren MT, Okuyucu EE, Okuyucu S, Akakin A. Investigating the effects of subthalamic nucleus-deep brain stimulation on the voice quality. Somatosens Mot Res 2020 epub 1-8 https://pubmed.ncbi.nlm.nih.gov/32397796
49. Schaper FLWVJ, Plantinga BR, Colon AJ, Wagner GL, Boon P, Blom N, Gommer ED, Hoogland G, Ackermans L, Rouhl RPW, Temel Y. Deep brain stimulation in epilepsy: a role for modulation of the mammillothalamic tract in seizure control? Neurosurgery 2020 epub https://pubmed.ncbi.nlm.nih.gov/32421806
50. Scherer M, Milosevic L, Guggenberger R, Maus V, Naros G, Grimm F, Bucurenciu I, Steinhoff BJ, Weber YG, Lerche H, Weiss D, Rona S, Gharabaghi A. Desynchronization of temporal lobe theta-band activity during effective anterior thalamus deep brain stimulation in epilepsy. Neuroimage 2020 epub https://pubmed.ncbi.nlm.nih.gov/32445879 https://www.sciencedirect.com/science/article/pii/S1053811920304535?via%3Dihub
51. Scherrer S, Smith AH, Gowatsky J, Palmese CA, Jimenez-Shahed J, Kopell BH, Mayberg HS, Figee M. Impulsivity and compulsivity after subthalamic deep brain stimulation for Parkinson's disease. Front Behav Neurosci 2020 epub 14:47 https://pubmed.ncbi.nlm.nih.gov/32390809 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7191054/
52. Servello D, Galbiati TF, Balestrino R, Iess G, Zekaj E, Michele S, Porta M. Deep brain stimulation for Gilles de la Tourette syndrome: toward limbic targets. Brain Sci 2020 10(5):E301 https://pubmed.ncbi.nlm.nih.gov/32429219 https://www.mdpi.com/2076-3425/10/5/301/htm
53. Su KG, Kim HM, Martinez V. Repeated group alternation as a programming strategy for essential tremor patients experiencing rapid habituation with deep brain stimulation treatment. Int J Neurosci 2020 epub 1-5 https://pubmed.ncbi.nlm.nih.gov/32370587
54. Tai CH, Pan MK, Tseng SH, Wang TR, Kuo CC. Hyperpolarization of the subthalamic nucleus alleviates hyperkinetic movement disorders. Sci Rep 2020 10(1):8278 https://pubmed.ncbi.nlm.nih.gov/32427942 https://www.nature.com/articles/s41598-020-65211-w
55. Telkes I, Sabourin S, Durphy J, Adam O, Sukul V, Raviv N, Staudt MD, Pilitsis JG. Functional use of directional local field potentials in the subthalamic nucleus deep brain stimulation. Front Hum Neurosci 2020 epub 14:145 https://pubmed.ncbi.nlm.nih.gov/32410972 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7198898/
56. Tsuboi T, Lemos Melo Lobo Jofili Lopes J, Patel B, Legacy J, Moore K, Eisinger RS, Almeida L, Foote KD, Okun MS, Ramirez-Zamora A. Parkinson's disease motor subtypes and bilateral GPi deep brain stimulation: one-year outcomes. Parkinsonism Relat Disord 2020 75:7-13 https://pubmed.ncbi.nlm.nih.gov/32428801
57. Valverde S, Vandecasteele M, Piette C, Derousseaux W, Gangarossa G, Aristieta Arbelaiz A, Touboul J, Degos B, Venance L. Deep brain stimulation-guided optogenetic rescue of parkinsonian symptoms. Nat Commun 2020 11(1):2388 https://pubmed.ncbi.nlm.nih.gov/32404907 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7220902/
58. Vibholm AK, Landau AM, Alstrup AKO, Jacobsen J, Vang K, Munk OL, Dietz MJ, Orlowski D, Sørensen JCH, Brooks DJ. Activation of NMDA receptor ion channels by deep brain stimulation in the pig visualised with [^{18}F]GE-179 PET. Brain Stimul 2020 13(4):1071-1078 https://pubmed.ncbi.nlm.nih.gov/32388196 https://www.brainstimjrnl.com/article/S1935-861X(20)30072-3/pdf

59. Vogel D, Shah A, Coste J, Lemaire JJ, Wårdell K, Hemm S. Anatomical brain structures normalization for deep brain stimulation in movement disorders. Neuroimage Clin 2020 27:102271 https://pubmed.ncbi.nlm.nih.gov/32446242 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7240191/
60. Voruz P, Le Jeune F, Haegelen C, N'Diaye K, Houvenaghel JF, Sauleau P, Drapier S, Drapier D, Grandjean D, Vérin M, Péron J. Motor symptom asymmetry in Parkinson's disease predicts emotional outcome following subthalamic nucleus deep brain stimulation. Neuropsychologia 2020 epub https://pubmed.ncbi.nlm.nih.gov/32413433
61. Wang M, Jia L, Wu X, Sun Z, Xu Z, Kong C, Ma L, Zhao R, Lu S. Deep brain stimulation improves motor function in rats with spinal cord injury by increasing synaptic plasticity. World Neurosurg 2020 epub https://pubmed.ncbi.nlm.nih.gov/32407911
62. Yang B, Tam F, Davidson B, Wei PS, Hamani C, Lipsman N, Chen CH, Graham SJ. An anthropomorphic phantom with implanted neurostimulator for investigation of MRI safety. Med Phys 2020 epub https://pubmed.ncbi.nlm.nih.gov/32350868
63. You Z, Wu YY, Wu R, Xu ZX, Wu X, Wang XP. Efforts of subthalamic nucleus deep brain stimulation on cognitive spectrum: from explicit to implicit changes in the patients with Parkinson's disease for 1 year. CNS Neurosci Ther 2020 epub https://pubmed.ncbi.nlm.nih.gov/32436660 https://onlinelibrary.wiley.com/doi/epdf/10.1111/cns.13392
64. Yu C, Cassar IR, Sambangi J, Grill WM. Frequency-specific optogenetic deep brain stimulation of subthalamic nucleus improves parkinsonian motor behaviors. J Neurosci 2020 epub https://pubmed.ncbi.nlm.nih.gov/32312888
65. Zhu GY, Zhang RL, Chen YC, Liu YY, Liu DF, Wang SY, Jiang Y, Zhang JG. Characteristics of globus pallidus internus local field potentials in generalized dystonia patients with TWNK mutation. Clin Neurophysiol 2020 131(7):1453-1461 https://pubmed.ncbi.nlm.nih.gov/32387964

DRG

1. Ghosh P, Gungor S. Utilization of concurrent dorsal root ganglion stimulation and dorsal column spinal cord stimulation in complex regional pain syndrome. Neuromodulation 2020 epub https://pubmed.ncbi.nlm.nih.gov/32162402 https://onlinelibrary.wiley.com/doi/full/10.1111/ner.13144
2. Yu G, Segel I, Zhang Z, Hogan QH, Pan B. Dorsal root ganglion stimulation alleviates pain-related behaviors in rats with nerve injury and osteoarthritis. Anesthesiology 2020 epub https://pubmed.ncbi.nlm.nih.gov/32433276

GES

1. Condon S, Patel A, Shah N, Stocker A, Hughes M, Farmer R, Abell T. Gastric electrical stimulators causing erosion through the colonic wall. ACG Case Rep J 2020 7(2):e00313 https://pubmed.ncbi.nlm.nih.gov/32440521 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7209803/

SCS

1. Al-Kaisy A, Van Buyten JP, Kapural L, Amirdelfan K, Gliner B, Caraway D, Subbaroyan J, Edgar D, Rotte A. 10 kHz spinal cord stimulation for the treatment of non-surgical refractory back pain: subanalysis of pooled data from two prospective studies. Anaesthesia 2020 75(6):775-784 https://pubmed.ncbi.nlm.nih.gov/32383509 https://onlinelibrary.wiley.com/doi/full/10.1111/anae.15036
2. Berger AA, Hasoon J, Urits I, Viswanath O, Gill J. 10 kHz spinal cord stimulation for combined alleviation of post-laminectomy syndrome and chronic abdominal pain: a case report. J Pain Res

2020 13:873-875 https://pubmed.ncbi.nlm.nih.gov/32431535 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7198401/
3. Buch VP, McShane BJ, Beatson N, Yang A, Blanke A, Tilden D, Korn M, Chaibainou H, Ramayya A, Wombacher K, Maier S, Marashlian T, Wolf R, Baltuch GH. Focused ultrasound thalamotomy with dentato-rubro-thalamic tractography in patients with spinal cord stimulators and cardiac pacemakers. Stereotact Funct Neurosurg 2020 epub https://pubmed.ncbi.nlm.nih.gov/32403106
4. Dalrymple AN, Roszko DA, Sutton RS, Mushahwar VK. Pavlovian control of intraspinal microstimulation to produce over-ground walking. J Neural Eng 2020 epub https://pubmed.ncbi.nlm.nih.gov/32348970
5. Hussain NS, Bissell JN, Gospodarev V, Hussain A. Spinal cord stimulator paddle lead surgery complicated by cerebrospinal fluid leak and fistula formation. Cureus 2020 12(4):e7619 https://pubmed.ncbi.nlm.nih.gov/32399352 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7213667/
6. Ghosh P, Gungor S. Utilization of concurrent dorsal root ganglion stimulation and dorsal column spinal cord stimulation in complex regional pain syndrome. Neuromodulation 2020 epub https://pubmed.ncbi.nlm.nih.gov/32162402 https://onlinelibrary.wiley.com/doi/full/10.1111/ner.13144
7. Kim EK, Lee CS, Yoo Y, Park JW, Kim JS, Kim Y, Moon JY, Kim YC. The long- term effectiveness of the automatic position-adaptive system in spinal cord stimulation: a retrospective comparative study with a two-year follow-up. Pain Med 2020 epub https://pubmed.ncbi.nlm.nih.gov/32443142
8. Mikhaylov EN, Moshonkina TR, Zharova EN, Garkina SV, Kovzelev PD, Belyaeva NN, Kozlenok AV, Lebedev DS, Shlyakhto EV. Acute cardiovascular effects of non- invasive electrical spinal cord stimulation: results from a pilot study in humans. J Cardiovasc Transl Res 2020 epub https://pubmed.ncbi.nlm.nih.gov/32378161
9. Musienko PE, Lyalka VF, Gorskii OV, Merkulyeva N, Gerasimenko YP, Deliagina TG, Zelenin PV. Comparison of operation of spinal locomotor networks activated by supraspinal commands and by epidural stimulation of the spinal cord in cats. J Physiol 2020 epub https://pubmed.ncbi.nlm.nih.gov/32445488
10. Paz JF, Santiago Sanz MDM, Paz-Domingo MV, Gandía-González ML, Santiago-Pérez S, Roda Frade JM. The use of transcranial motor-evoked potentials, somatosensory-evoked potentials and free-run electromyography for proper placement of paddle leads in chronic pain. Br J Neurosurg 2020 epub 1-5 https://pubmed.ncbi.nlm.nih.gov/32347125
11. Royds J, Conroy MJ, Dunne MR, Cassidy H, Matallanas D, Lysaght J, McCrory C. Examination and characterisation of burst spinal cord stimulation on cerebrospinal fluid cellular and protein constituents in patient responders with chronic neuropathic pain - a pilot study. J Neuroimmunol 2020 epub 344:577249 https://pubmed.ncbi.nlm.nih.gov/32361148
12. Shah RV, Kaye AD, Urman RD. Emerging concepts in the closed-loop spinal cord stimulation system: preliminary results of the Avalon study. Ann Palliat Med 2020 epub https://pubmed.ncbi.nlm.nih.gov/32434351 http://apm.amegroups.com/article/view/42795/pdf
13. Sheldon BL, Khazen O, Feustel PJ, Gechtman G, Rosoklija G, Patel S, DiMarzio M, Bridger C, Dentinger R, Slyer J, Pilitsis JG. Correlations between family history of psychiatric illnesses and outcomes of spinal cord stimulation. Neuromodulation 2020 epub https://pubmed.ncbi.nlm.nih.gov/32372430 https://onlinelibrary.wiley.com/doi/full/10.1111/ner.13162
14. Vervaat FE, van der Gaag A, van Suijlekom H, Botman CJ, Teeuwen K, Wijnbergen I. Improvement in quality of life and angina pectoris: 1-year follow-up of patients with refractory angina pectoris and spinal cord stimulation. Neth Heart J 2020 epub https://pubmed.ncbi.nlm.nih.gov/32430654 https://link.springer.com/content/pdf/10.1007/s12471-020-01422-0.pdf

15. Zander H, Graham R, Anaya CJ, Lempka S. Anatomical and technical factors affecting the neural response to epidural spinal cord stimulation. J Neural Eng 2020 epub https://pubmed.ncbi.nlm.nih.gov/32365340
16. Zanfini BA, De Martino S, Frassanito L, Catarci S, Vitale di Maio F, Giuri PP, Gonnella GL, Draisci G. 'Please mind the gap': successful use of ultrasound—assisted spinal anesthesia for urgent cesarean section in a patient with implanted spinal cord stimulation system for giant chest wall arteriovenous malformation—a case report. BMC Anesthesiol 2020 20(1):122 https://pubmed.ncbi.nlm.nih.gov/32446301 https://bmcanesthesiol.biomedcentral.com/articles/10.1186/s12871-020-01042-6

SNS

1. Cohen TN, Cohen KA, Burton CS, Kanji F, Francis SE, Patel D, Ackerman AL, Eilber KS, Anger JT. Identifying opportunities to improve patient experience with sacral neuromodulation: a human factors approach. Urology 2020 epub https://pubmed.ncbi.nlm.nih.gov/32389820
2. Gupta A, Kinman C, Hobson DTG, Meriwether KV, Gaskins JT, Uddin MN, Stewart JR, Francis SL. The impact of fluoroscopy during percutaneous nerve evaluation on subsequent implantation of a sacral neuromodulator among women with pelvic floor disorders: a randomized, noninferiority trial. Neuromodulation 2020 epub https://pubmed.ncbi.nlm.nih.gov/32367666 https://onlinelibrary.wiley.com/doi/epdf/10.1111/ner.13164
3. Jiang J, Patil D, Traore E, Hammett J, Filson CP. Contemporary patterns of third-line treatments for privately insured individuals with overactive bladder in the United States. Urology 2020 epub https://pubmed.ncbi.nlm.nih.gov/32437771
4. Schönburg S, Bukethal T, Fornara P. Does age alone negatively predict the outcome of sacral neuromodulation? A single-centre retrospective observational study. BMC Urol 2020 20(1):55 https://pubmed.ncbi.nlm.nih.gov/32410612 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7227205/
5. Syan R, Zhang CA, Enemchukwu EA. Racial and socioeconomic factors influence utilization of advanced therapies in commercially insured OAB patients: an analysis of over 800,000 OAB patients. Urology 2020 epub https://pubmed.ncbi.nlm.nih.gov/32439551

Most clicked links during April from the May newsletter

1. Anderson CJ, Anderson DN, Pulst SM, Butson CR, Dorval AD. Neural selectivity, efficiency, and dose equivalence in deep brain stimulation through pulse width tuning and segmented electrodes. Brain Stimul 2020 epub https://www.ncbi.nlm.nih.gov/pubmed/32278715 https://www.brainstimjrnl.com/article/S1935-861X(20)30070-X/pdf
2. Besa Lehmann V, Rosenbaum M, Bulman DE, Read T, Verhagen Metman L. A case report of myoclonus-dystonia with isolated myoclonus phenotype and novel mutation successfully treated with deep brain stimulation. Neurol Ther 2020 epub https://www.ncbi.nlm.nih.gov/pubmed/32274660 https://link.springer.com/article/10.1007%2Fs40120-020-00186-4
3. Bonmassar G, Serano P. MRI-induced heating of coils for microscopic magnetic stimulation at 1.5 tesla: an initial study. Front Hum Neurosci 2020 epub 14:53 https://www.ncbi.nlm.nih.gov/pubmed/32231526 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7082860/
4. Chaitanya G, Romeo AK, Ilyas A, Irannejad A, Toth E, Elsayed G, Bentley JN, Riley KO, Pati S. Robot-assisted stereoelectroencephalography exploration of the limbic thalamus in human focal epilepsy: implantation technique and complications in the first 24 patients. Neurosurg Focus 2020 48(4):E2 https://www.ncbi.nlm.nih.gov/pubmed/32234983 https://thejns.org/focus/view/journals/neurosurg-focus/48/4/article-pE2.xml#container-10430-

item-10435
5. Crispo JAG, Lam M, Le B, Richard L, Shariff SZ, Ansell DR, Squarzolo M, Marras C, Willis AW, Seitz D. Disparities in deep brain stimulation use for Parkinson's disease in Ontario, Canada. Can J Neurol Sci 2020 epub 1-35 https://www.ncbi.nlm.nih.gov/pubmed/32329424
6. Cooper MD, Restrepo C, Hill R, Hong M, Greene R, Weise LM. The accuracy of 3D fluoroscopy (XT) vs computed tomography (CT) registration in deep brain stimulation (DBS) surgery. Acta Neurochir (Wien) 2020 epub https://www.ncbi.nlm.nih.gov/pubmed/32300988
7. Baertschi M, Favez N, Flores Alves Dos Santos J, Radomska M, Herrmann F, Burkhard PR, Canuto A, Weber K, Ghisletta P. Illness representations and coping strategies in patients treated with deep brain stimulation for Parkinson's disease. J Clin Med 2020 epub 9(4) https://www.ncbi.nlm.nih.gov/pubmed/32326245 https://www.mdpi.com/2077-0383/9/4/1186/htm
8. Du TT, Zhu G, Chen Y, Shi L, Liu D, Liu Y, Zhang X, Zhang J. Anterior thalamic nucleus stimulation protects hippocampal neurons by activating autophagy in epileptic monkeys. Aging (Albany NY) 2020 12(7):6324-6339 https://www.ncbi.nlm.nih.gov/pubmed/32267832 https://www.aging-us.com/article/103026/text
9. Fransson PA, Nilsson MH, Niehorster DC, Nyström M, Rehncrona S, Tjernström F, Magnusson M, Johansson R, Patel M. Exploring the effects of deep brain stimulation and vision on tremor in Parkinson's disease - benefits from objective methods. J Neuroeng Rehabil 2020 17(1):56 https://www.ncbi.nlm.nih.gov/pubmed/32334622 https://jneuroengrehab.biomedcentral.com/articles/10.1186/s12984-020-00677-3

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