



NEWSLETTER #139 May 2025 See [ABOUT](#) WIKISTIM

Online, Living Systematic Review of Meta-analyses of Spinal Cord Stimulation Trials

This week we submitted a proposal to the International Neuromodulation Society for a panel discussion entitled as above to take place during its 2026 meeting in Lisbon. We plan to join with leaders in the field to explore recent advances as well as inconsistencies in meta-analyses (MAs) of spinal cord stimulation (SCS). We propose to present the background, describe the techniques involved, and explain the new online, living systematic review (SR) of SCS MAs that we are adding to WIKISTIM, as described in recent editions of this newsletter (always available through the [NEWS](#) link on our homepage).

SRs and MAs are potentially the highest forms of medical evidence, useful to policy makers and regulators, but the results can be and have been variable. As a resource for the neuromodulation community, WIKISTIM aims to address inconsistencies and fill the gaps between theory, practice, and accessibility.

We Have Nevro to Thank This Month!

We greatly appreciate Nevro's donation, which arrived just in the nick of time to be acknowledged in this newsletter. We are most grateful for Nevro's continued support of WIKISTIM.

A large, solid blue rectangular button with the words "Donate Now" in a large, white, sans-serif font, centered within the button.

WIKISTIM Now Has 1917 Subscribers

Thank you for telling your colleagues about our free resource.

Citations Added From Search on May 9, 2025

Whenever possible, we provide free full-text links. In most cases, we link directly to a PDF. In a few cases, our Free Full Text link points instead to a link leading to the PDF because clicking the PDF link causes an immediate download. We also do this in cases where the URL has a “watermark” or is ridiculously long.

We remind our readers that it might be necessary to click “View Entire Message” in our email to see all of the citation lists in this newsletter.

We list correction citations only if the error was substantial. For small changes, such as a missing initial in an author's name, we simply update the WIKISTIM database.

Deep Brain Stimulation (now 9017 citations)

1. Abkur T, Boogers A, Grippe T, Isaacs DA, Malaty IA, Munhoz RP, Bhatia KP, Hart LA, Fasano A, Kalia S, Lang AE, Ganos C. **Tics and Parkinson's disease: clinical and pathophysiological insights from a rare syndromic association.** Mov Disord Clin Pract 2025 epub [PubMed Free Full Text](#)
2. Acerbo E, Jegou A, Lagarde S, Pizzo F, Makhalova J, Trébuchon A, Bénar CG, Bartolomei F, Carron R. **Frequency-specific alterations in brain connectivity induced by pulvinar stimulation.** Epilepsia 2025 epub [PubMed Free Full Text](#)
3. Al Banna Q, Lalgudi Srinivasan H, Knight JC, Samuel M, Bodi I, Ashkan K. **Fatigue fracture of a DBS extension cable: a pictorial review.** Ann R Coll Surg Engl 2025 epub [PubMed Free Full Text](#)
4. Ayerbe J, Barroso B, García-Ruiz PJ, Pastor-Nieto MA, Sastre J, Cabrera-Montes J. **Pulse-generator rejection of probable allergic origin in deep brain stimulation: a rare complication successfully managed with a polytetrafluoroethylene-covered device.** Mov Disord Clin Pract 2025 epub [PubMed](#)
5. Babeliowsky WA, Meulepas MA, Buijink AWG, de Bie RMA, van Rootselaar AF. **How to treat orthostatic tremor - cohort study and systematic review.** Clin Park Relat Disord 2025 12:100318 [PubMed Free Full Text](#)
6. Bahnners BH, Goede LL, Zvarova P, Meyer GM, Butenko K, Lofredi R, Rajamani N, Schaper FLWVJ, Neudorfer C, Hollunder B, Pijar J, Madan S, Hart LA, Sure M, Steina A, Rassoulou F, Hartmann CJ, Butz M, Hirschmann J, Vesper J, Faust K, Schneider GH, Sander T, Fox MD, Miller KJ, Schnitzler A, Kühn AA, Florin E, Horn A. **The deep brain stimulation response network in Parkinson's disease operates in the high beta band.** medRxiv [preprint before peer review] 2025 epub [PubMed Free Full Text](#)
7. Baizabal-Carvallo JF, Alonso-Juarez M, Fekete R. **Head tremor in Parkinson's disease, clinical associations and response to therapy.** Clin Park Relat Disord 2025 12:100328 [PubMed Free Full Text](#)
8. Barbe N, Connolly M, Devergnas A, Torrès N, Hervault M, Bonis M, Billères M, Chabardes S, Piallat B. **Toward an automatic classification of the different stages of sleep: exploring patterns of neural activity in the subthalamic nucleus.** Eur J Neurosci 2025 61(7):e70107 [PubMed Free Full Text](#)
9. Bautista AND, Rosales RL, Diesta CCE, Oropilla JQ, Westenberger A, Brüggemann N, Klein C. **X-linked dystonia-parkinsonism in a manifesting**

- female: first case report of deep brain stimulation.** *Mov Disord Clin Pract* 2025 epub [PubMed](#)
10. Bhusal B, Sanpitak PP, Jiang F, Richardson J, Seiberlich N, Rosenow JM, Elahi B, Golestanirad L. **Comparative study of radiofrequency heating in deep brain stimulation devices during MRI at 1.5 T and 0.55 T: challenging the assumption of safety at low field strengths.** *Magn Reson Med* 2025 epub [PubMed Free Full Text](#)
 11. Binns TS, Köhler RM, Vanhoecke J, Chikermane M, Gerster M, Merk T, Pellegrini F, Busch JL, Habets JGV, Cavallo A, Beyer JC, Al-Fatly B, Li N, Horn A, Krause P, Faust K, Schneider GH, Haufe S, Kühn AA, Neumann WJ. **Shared pathway-specific network mechanisms of dopamine and deep brain stimulation for the treatment of Parkinson's disease.** *Nat Commun* 2025 16(1):3587 [PubMed Free Full Text](#)
 12. Bispo FMM, Dornas FM, Viana YG, Rodrigues RB, Vasconcelos JM, Penholate M, Lana RC, Polese JC. **Functioning, emotion, and pain perception of individuals with Parkinson's disease after deep brain stimulation surgery.** *J Bodyw Mov Ther* 2025 42:763-768 [PubMed](#)
 13. Brinkerhoff S, Nakhmani A, Varghese A, Gordon C, Gonzalez CL, Bentley JN, Holland MT, Walker HC. **Paired deep brain stimuli elicit short-term facilitation in globus pallidus interna and subthalamic nucleus.** *Mov Disord* 2025 epub [PubMed Free Full Text](#)
 14. Butler M, Askari A, Zhu B, Wyant K, Leventhal D, Patil PG, Chou KL. **Ventral STN stimulation is associated with improved axial motor outcomes in Parkinson's disease.** *J Neural Transm (Vienna)* 2025 epub [PubMed Free Full Text](#)
 15. Cabrera LY, Bluhm R, McCright AM, Achtyes ED. **Is the treatment worse than the disease?: Key stakeholders' views about the use of psychiatric electroceutical interventions for treatment-resistant depression.** *Neuroethics* 2025 18(1):1 [PubMed Free Full Text](#)
 16. Candeias da Silva C, Fung WKW, Al-Shorafat DM, Loh A, Santyr B, Kalia SK, Lozano AM, Fasano A. **Stimulation-induced dyskinesia in STN DBS patients.** *Mov Disord Clin Pract* 2025 epub [PubMed](#)
 17. Capilla RR, Hurley AM, Kumaravelu K, Peters JJ, Lee HJ, Turner DA, Grill WM, Schmidt SL. **Low-frequency dual target deep brain stimulation may relieve parkinsonian symptoms.** *medRxiv [preprint before peer review]* 2025 epub [PubMed Free Full Text](#)
 18. Choi IS, Kim J, Choi JH, Kim EM, Choi JW, Rah JC. **Modulation of premotor cortex excitability mitigates the behavioral and electrophysiological abnormalities in a Parkinson's disease mouse model.** *Prog Neurobiol* 2025 249:102761 [PubMed Free Full Text](#)
 19. Cui B, Mocchi MM, Metzger BA, Kalva P, Magnotti JF, Fiedorowicz JG, Waters A, Kovach CK, Reed YY, Mathura RK, Steger C, Pascuzzi B, Kanja K, Veerakumar A, Tiruvadi V, Crowell A, Denison L, Rozell CJ, Pouratian N, Goodman W, Riva Posse P, Mayberg HS, Bijanki KR. **Affective bias predicts changes in depression during deep brain stimulation therapy.** *Front Hum Neurosci* 2025 19:1539857 [PubMed Free Full Text](#)

20. Dabboucy B, Hazrati R, Langlois M, Prudhomme M. **Tremor associated with Klinefelter syndrome: report of a case treated by deep brain stimulation and systematic review of the literature.** Neuromodulation 2025 epub [PubMed](#)
21. Domínguez-Carral J, Reinhard C, Soliani L, Cif L, Ortigoza-Escobar JD. **Exploring the impact of dyskinetic crises in GNAO1-related disorders: a survey for parents and caregivers.** Mov Disord Clin Pract 2025 epub [PubMed](#)
22. Fruett da Costa PR, Oliveira de Paula G, de Oliveira HM, de Siqueira Silva AP, Oliveira Caetano G, Pilitsis JG, Lopes Alho EJ, Franceschini PR, da Silva Freitas T, Assumpção de Monaco B. **Cyanoacrylate adhesive with titanium plate fixation for deep brain stimulation leads: a case series and technical note.** Oper Neurosurg (Hagerstown) 2025 epub [PubMed](#)
23. George DD, Shao M, Brown JM, DiMarzio M, Weinand ME, Larson PS, Kasoff WS, Pilitsis JG. **Exploring rates of functional neurosurgery procedures in the Hispanic population: a single-institution analysis from 2017 to 2024.** Neuromodulation 2025 epub [PubMed](#)
24. Gerber LM, Shulman KS, Wright MS, Schiff ND, Fins JJ. **Qualitative analysis of symptoms from the central thalamic deep brain stimulation trial for traumatic brain injury.** NeuroRehabilitation 2025 56(2):143-151 [PubMed](#)
25. Grennan I, Perry B, Verghese A, Jones M, Härmson O, McNamara CG, Sharott A. **Phase-dependent closed-loop deep brain stimulation of the fornix provides bidirectional manipulation of hippocampal theta oscillations.** Brain Stimul 2025 epub [PubMed](#) [Free Full Text](#)
26. Hasimoglu O, Hanoglu T, Karacoban TO, Altinkaya A, Erkan B, Tugcu B. **Analysis of intracerebral abscesses in deep brain stimulation and association with hardware-related wound complications.** J Formos Med Assoc 2025 epub [PubMed](#) [Free Full Text](#)
27. Hasimoglu O, Karaçoban TÖ, Hanoglu T, Geylan NB, Altinkaya A, Erkan B, Postalci LŞ, Tugcu B. **Anatomical determinants of STN coordinate shift in idiopathic Parkinson's disease DBS surgery.** CNS Neurosci Ther 2025 31(4):e70307 [PubMed](#) [Free Full Text](#)
28. Imbalzano G, Montanaro E, Ledda C, Donetto F, D'Angelo F, Campisi C, Artusi CA, Romagnolo A, Rizzone MG, Bozzali M, Lopiano L, Zibetti M. **Theta-gamma subthalamic stimulation for verbal fluency in Parkinson's disease: a randomized, crossover trial.** Mov Disord 2025 epub [PubMed](#) [Free Full Text](#)
29. Jaffee S, Gupta N, Kramer D, Kusyk DM, Valeriano J, Merkley A, Kite T, Arora S, Grover P, Whiting AC. **Stereo-electroencephalography in the setting of a preexisting deep brain stimulation device: illustrative case.** J Neurosurg Case Lessons 2025 9(17):CASE24854 [PubMed](#) [Free Full Text](#)
30. Jana S, Bhattacharyya PK, Malekmohammadi M, Lin J, Lowe M, Heimbuch IS, Machado A, Pouratian N, Jones SE. **Increased BOLD activation of response inhibition task-relevant network with subthalamic nucleus deep brain stimulation in patients with Parkinson's disease: a pilot study.** Parkinsonism Relat Disord 2025 135:107835 [PubMed](#)
31. Johnson C, Miller G, Shah S, Stevens C, Thomas N, Toms J, Arevalo O. **Unveiling patterns of peri-lead edema after deep brain stimulation: a**

- retrospective review of clinical and demographic factors.** *Neuroradiology* 2025 epub [PubMed Free Full Text](#)
32. Kaur H, Goble TJ, Fenoy A, Ramdhani RA. **Deep brain stimulation for post-hypoxic myoclonus: a case correlating local field potentials to clinical outcome.** *Tremor Other Hyperkinet Mov (NY)* 2025 15:16 [PubMed Free Full Text](#)
 33. Khosravi S, Moosavian T, Salehpour S, Habibi SAH, Alavi A, Rohani M. **Clinical and genetic characterization of Woodhouse-Sakati syndrome in Iranian patients: a case series.** *J Mov Disord* 2025 epub [PubMed Free Full Text](#)
 34. Kim J, Shin HK, Kim JH, So HY, Kim MS, Jo S, Chung SJ, Hong SH, Jeon SR. **Delayed hemorrhagic complications following deep brain stimulation surgery for Parkinson's disease: importance of comprehensive presurgical evaluation.** *J Clin Neurosci* 2025 136:111237 [PubMed](#)
 35. Kim MJ, Butala A, Salimpour Y, Sawa A, Figuee M, Choi KS, Schretlen D, Mills KA, Cascella N. **Effective stimulation sites and networks for substantia nigra pars reticulata deep brain stimulation for auditory verbal hallucinations in schizophrenia.** *medRxiv [preprint before peer review]* 2025 epub [PubMed Free Full Text](#)
 36. Lamoš M, Bočková M, Missey F, Lubrano C, de Araújo E Silva M, Trajlínek J, Studnička O, Daniel P, Carron R, Jirsa V, Chrastina J, Jančálek R, Glowacki ED, Cassara A, Neufeld E, Rektorová I, Williamson A. **Noninvasive temporal interference stimulation of the subthalamic nucleus in Parkinson's disease reduces beta activity.** *Mov Disord* 2025 epub [PubMed Free Full Text](#)
 37. Lannon M, Martyniuk A, Aminnejad M, Hatoum R, Paoloni D, Hall D, Farrokhyar F, Bhandari M, Kalia SK, Sharma S. **Mixed methods survey to identify barriers to accessing deep brain stimulation for movement disorders in Canada.** *Can J Neurol Sci* 2025 epub 1-42 [PubMed](#)
 38. Liu S, Qi Y, Hu S, Wei N, Zhang J, Zhu J, Wu H, Hu H, Yang Y, Wang Y. **A habenula neural biomarker simultaneously tracks weekly and daily symptom variations during deep brain stimulation therapy for depression.** *IEEE J Biomed Health Inform* 2025 epub [PubMed](#)
 39. Liu Y, Zhang Q, Zhang H, Xiang Y, Wang H. **Research hotspots and frontiers of neuromodulation technology in the last decade: a visualization analysis based on the Web of Science database.** *Front Hum Neurosci* 2025 19:1574721 [PubMed Free Full Text](#)
 40. Loehrer PA, Freigang J, Bopp MHA, Calvano A, Dafsari HS, Wichmann J, Seidel A, Aberle C, Knake S, Nimsky C, Timmermann L, Belke M, Pedrosa DJ. **Microstructure is associated with motor outcomes following deep brain stimulation in Parkinson's disease.** *NPJ Parkinsons Dis* 2025 11(1):81 [PubMed Free Full Text](#)
 41. Lu W, Rao M, Lu L, Li P, Dou X, Bian J, Deng X. **Relationship between preoperative high arterial blood lactate level and delirium after deep brain stimulation surgery in Parkinson's disease.** *Front Aging* 2025 6:1538012 [PubMed Free Full Text](#)
 42. Luppi AI, Uhrig L, Tasserie J, Shafiei G, Muta K, Hata J, Okano H, Golkowski D, Ranft A, Ilg R, Jordan D, Gini S, Liu ZQ, Yee Y, Signorelli CM, Cofre R, Destexhe A, Menon DK, Stamatakis EA, Connor CW, Gozzi A, Fulcher BD, Jarraya B,

- Misic B. **Comprehensive profiling of anaesthetised brain dynamics across phylogeny.** bioRxiv [preprint before peer review] 2025 epub [PubMed Free Full Text](#)
43. Magnant GA, Darbin O, McKee K, Martino A. **Management of cutaneous scalp complications in deep brain stimulation: illustrative cases.** J Neurosurg Case Lessons 2025 9(18):CASE24833 [PubMed Free Full Text](#)
44. Maith O, Apenburg D, Hamker F. **Pallidal deep brain stimulation enhances habitual behavior in a neuro-computational basal ganglia model during a reward reversal learning task.** Eur J Neurosci 2025 61(9):e70130 [PubMed Free Full Text](#)
45. Martinez Nunez AE, Kusyk DM, Wong JK, Okun MS, Hilliard JD. **Lesioning through a directional deep brain stimulation lead in the subthalamic nucleus.** Tremor Other Hyperkinet Mov (NY) 2025 15(1):12:1-6 [PubMed Free Full Text](#)
46. McAuley MD, Dean JM, Heming E, Ionova AA, Onabajo CA, Solie M, Stephenson SA, Boehnke SE. **Parkinson's disease participant-led research on the impact of deep brain stimulation frequency.** J Parkinsons Dis 2025 epub [PubMed Free Full Text](#)
47. Mehta K, Noecker AM, McIntyre CC. **Comparison of structural connectomes for modeling deep brain stimulation pathway activation.** Neuroimage 2025 312:121211 [PubMed Free Full Text](#)
48. Ollivier T, Pinto S, Rolland AS, Cailliau E, Touzet G, Thobois S, Eusebio A, Hainque E, Rouaud T, Drapier S, Guehl D, Maltete D, Anheim M, Lagha Boukbiza O, Giordana C, Tir M, Hopes L, Hubsch C, Jarraya B, Marques A, Brefel C, Rascol O, Corvol JC, Benatru I, Defebvre L, Devos D, Moreau C; French PREDISTIM study group. **Parkinson's disease, speech and neurosurgery.** Brain Behav 2025 15(5):e70101 [PubMed Free Full Text](#)
49. Paracka L, Heldmann M, Lange F, Saryyeva A, Klietz M, Münte TF, Kopp B, Wegner F, Krauss JK. **Subthalamic nucleus dynamics during executive functioning: Insights from local field potentials in Parkinson's disease.** Neuroscience 2025 574:65-73 [PubMed Free Full Text](#)
50. Rupich K, Schlegel A, Baltuch G, Clark-Cutaia MN. **Deep brain stimulator surgery does not require postoperative intensive care unit admission.** J Neurosci Nurs 2025 epub [PubMed](#)
51. Saad S, Abouelnaga AF, Abass M, Obydah W, Kiwan NA, Ammar OA, Abulseoud OA, Hussein AM. **Effect of deep brain stimulation for lateral hypothalamic area on memory decline and hippocampal neurofilaments expression dysfunctions in aged rats.** Neuroreport 2025 epub [PubMed](#)
52. Sanrey E, Grasso M, Brethome M, Chan-Seng E, Gil V, Coubes P, Poulen G. **Quality of life after deep brain stimulation: a primary versus secondary dystonia comparative study.** Stereotact Funct Neurosurg 2025 epub 1-12 [PubMed](#)
53. Sarica C, Yamamoto K, Iorio-Morin C, Germann J, Yang AZ, Santyr B, Colditz M, Vetkas A, Fomenko A, Davidson B, Schmidt F, Grippe T, Samuel N, Zemmar A, Flouty O, Cheyuo C, Darmani G, Chen R, Boutet A, Neudorfer C, Hodaie M, Kalia SK, Munhoz RP, Fasano A, Lozano AM. **Bilateral focused ultrasound**

- thalamotomy for essential tremor: clinical outcomes compared to bilateral deep brain stimulation and probabilistic lesion mapping.** *Mov Disord* 2025 epub [PubMed Free Full Text](#)
54. Scheller U, Paschen S, Maass F, van Riesen C. **Deep brain stimulation of the VIM for tremor in a patient with POLR3A-associated cerebellar syndrome without long-term benefit.** *Tremor Other Hyperkinet Mov (NY)* 2025 epub 15:15 [PubMed Free Full Text](#)
 55. Seddighfar M, Bahmani Z, Haghparast A. **Infralimbic deep brain stimulation: the impact of frequency and timing on extinction and reinstatement of morphine-seeking behaviors in male rats.** *Prog Neuropsychopharmacol Biol Psychiatry* 2025 139:111383 [PubMed](#)
 56. Seilheimer RL, Qiu L, Rocchio G, Nho YH, Campos G, Pesaran B, Williams NR, Rolle CE, Buch VP, Ganguly TM, Miller KJ, Cristancho M, Oathes DJ, Brown L, Scangos KW, Barbosa DAN, Halpern CH. **Stereo-encephalography-guided multi-lead deep brain stimulation for treatment-refractory obsessive compulsive disorder - study design and individualized surgical targeting approach.** *medRxiv [preprint before peer review]* 2025 epub [PubMed Free Full Text](#)
 57. Shin D, Lopez-Gonzalez MA. **The impact of sociodemographic factors and surgical modalities on deep brain stimulation for Parkinson's disease.** *Surg Neurol Int* 2025 epub 16:91 [PubMedFree Full Text](#)
 58. Singh S, Armstrong C, Melamed SE, Galligan K, Han M, DiGiovine M, Kessler SK, Kennedy BC. **Safety profile of intracranial neuromodulation for drug-resistant epilepsy in children.** *J Neurosurg Pediatr* 2025 epub 1-9 [PubMed](#)
 59. Soh C, Hervault M, Rohl AH, Greenlee JDW, Wessel JR. **Precisely-timed outpatient recordings of subcortical local field potentials from wireless streaming-capable deep-brain stimulators: a method and toolbox.** *J Neurosci Methods* 2025 418:110448 [PubMed](#)
 60. Sultanova SG, Fedorova NV, Verugina NI, Smolentseva IG. **The effect of bilateral subthalamic nucleus deep brain stimulation on gait and balance in patients with Parkinson's disease.** Russian. *Zh Nevrol Psikiatr Im S S Korsakova* 2025 125(3):94-101 [PubMed Free Full Text](#)
 61. Tien R, Platt J, Mendlen M, Kern D, Ojemann S, Thompson J, Kramer D. **Neurons in human motor thalamus encode reach kinematics and positional errors related to braking.** *Res Sq [preprint before peer review]* 2025 epub [PubMed Free Full Text](#)
 62. Timmermann O, Ojemann SG, Thompson JA, Treat L, Kern DS. **Case report of bilateral subthalamic nucleus deep brain stimulation in an adolescent TUBB4A patient: she can sit on a horse.** *Mov Disord Clin Pract* 2025 epub [PubMed](#)
 63. Uchitel J, Lui A, Knowles J, Parker JJ, Phillips HW, Halpern CH, Grant GA, Buch VP, Hyslop A, Kumar KK. **Intracranial neuromodulation for pediatric drug-resistant epilepsy: early institutional experience.** *Front Surg* 2025 12:1569360 [PubMed Free Full Text](#)
 64. Vergne C, Madec M, Guzman R, Pascal J, Taub E, Bourgeois F, Hemm S. **In vitro assessment and comparison of a novel electromagnetic tracking**

- system for stereotactic DBS surgery.** Ann Biomed Eng 2025
epub [PubMed Free Full Text](#)
65. Wan X, Shen J, Lin Z, Lin S, Wu Y, Li D. **Remote programming for deep brain stimulation among patients with isolated dystonia: patient attitudes and treatment effect.** Mov Disord Clin Pract 2025 epub [PubMed](#)
 66. Wang S, Ma R, Yuan Q, Li H, Jiang C. **Efficient, robust, and accurate CNN predictor for neuronal activation in directional deep brain stimulation.** IEEE Trans Neural Syst Rehabil Eng 2025 33:1685-1694 [PubMed Free Full Text](#)
 67. Weill C, Heymann S, Dayan R, Linetsky E, Bergman H, Israel Z, Arkadir D. **Compressive cervical myelopathy causing impaired gait after deep brain stimulation is not rare.** Mov Disord Clin Pract 2025 epub [PubMed Free Full Text](#)
 68. Wu S, Cen Z, Zheng X, Xie F, Luo W. **Investigation of the impact of STN-DBS on Parkinson's disease patients with genetic risk factors/causes.** World Neurosurg 2025 epub [PubMed Free Full Text](#)
 69. Xie S, Liu Y, Yang A, Meng F, Jiang C, Fang H, Han R, Zhang J, Shi L. **Scalp block improves electrophysiological stability and patient cooperation during deep brain stimulation surgery.** Sci Rep 2025 15(1):12596 [PubMed Free Full Text](#)
 70. Xu J, Liu B, Shang G, Feng Z, Yang H, Chen Y, Yu X, Mao Z. **Efficacy and safety of bilateral deep brain stimulation (DBS) for severe Alzheimer's disease: a comparative analysis of fornix versus basal ganglia of Meynert.** CNS Neurosci Ther 2025 31(4):e70285 [PubMed Free Full Text](#)
 71. Xu Z, Duan W, Yuan S, Zhang X, You C, Yu JT, Wang J, Li JD, Deng S, Shu Y. **Deep brain stimulation alleviates Parkinsonian motor deficits through desynchronizing GABA release in mice.** Nat Commun 2025 16(1):3726 [PubMed Free Full Text](#)
 72. Yadala S, Zahoor S, Escalona-Vargas D, Palys V. **Acute disruption of cortical epileptiform discharges with thalamic stimulation.** J Clin Neurophysiol 2025 epub [PubMed](#)
 73. Yalaz M, Höft M, Maling N, Butz M, Juárez Paz LM, Boe P, Bahnners BH, Schnitzler A, Helmers AK, Deuschl G. **Detection of deep brain stimulation lead position and orientation in patients using magnetoencephalography.** Clin Neurophysiol 2025 173:221-228 [PubMed Free Full Text](#)
 74. Yamaguchi C, Anwar H, Lesko A, Kaber SM, Oliveria SF. **Sensorimotor physiological mapping during asleep deep brain stimulation lead placement with multichannel intraoperative neuromonitoring.** Oper Neurosurg (Hagerstown) 2025 epub [PubMed](#)
 75. Younce JR, Norris SA, Ushe M, Perlmutter JS. **Functional connectivity and volumetrics improve outcome prediction for deep brain stimulation in Parkinson's disease.** Mov Disord Clin Pract 2025 epub [PubMed Free Full Text](#)
 76. Zhao G, Cheng Y, Li G, Li L, Cong G, Zhao Q, Li F, Wu Y, Du C, Yan J, Wang M, Feng K, Yin S. **Exploring local and network effects of subthalamic stimulation on semantic verbal fluency in Parkinson's disease.** J Neurosurg 2025 epub 1-10 [PubMed](#)

Dorsal Root Ganglion Stimulation (still 299 citations)

Gastric Electrical Stimulation (still 531 citations)

Meta-Analysis (now 54 citations)

1. Abbas A, Sabet H, El-Moslemani M, Abo-Elnour DE, Olama SM, Saleh MGA, Awad H, Raslan AM. **From short-term relief to long-term management: a meta-analysis of temporary spinal cord stimulation and pulsed radiofrequency in postherpetic neuralgia.** Neuromodulation 2025 epub [PubMed](#)

Peripheral Nerve Stimulation (now 8904 citations)

1. Alonso B, Viscasillas J, Vlaminc L, Schauvliege S. **Feasibility of a simultaneous ultrasound (US) and peripheral nerve stimulation (PNS) guided interscalene brachial plexus injection in calves.** Vet J 2025 312:106360 [PubMed](#)
2. Arvin N, Barker A, Fechtel B, Cutrer M, Eshraghi Y. **Temporary peripheral nerve stimulation for complex regional pain syndrome type i in the upper extremity: a case report.** Pain Med Case Rep 2025 9(1):21-25 [PubMed](#) [Free Full Text](#)
3. Ashoush F, Abdelrahim A, Ali O, Kamali D, Harrison S, Reddy A, Elshazly W, Sultan M, Saafan T, Abounozha S, Ahmed M. **A randomized controlled trial comparing the efficacy of bilateral percutaneous tibial nerve stimulation versus biofeedback pelvic floor muscle training in the management of obstructed defecation syndrome.** Cureus 2025 17(3):e80885 [PubMed](#) [Free Full Text](#)
4. Asperti A, Peterson N, Casnovsky J, Gharib M. **Peripheral nerve stimulation at the spinoglenoid notch may have advantages over suprascapular notch - case report.** Pain Med Case Rep 2025 9(1):55-58 [PubMed](#) [Free Full Text](#)
5. Cady SR, Lambrecht JM, Dsouza KT, Dunning JL, Anderson JR, Malone KJ, Chepla KJ, Graczyk EL, Tyler DJ. **First-in-human implementation of a bidirectional somatosensory neuroprosthetic system with wireless communication.** J Neuroeng Rehabil 2025 22(1):90 [PubMed](#) [Free Full Text](#)
6. Chawla SA, Harrison KL, Walter LC, Yank V, Wang L, Suskind AM. **Specialist practices for managing persons living with dementia and urinary incontinence.** Int Urogynecol J 2025 epub [PubMed](#) [Free Full Text](#)
7. Ferrão Malheiro S, Beucier N, Leplus A, Lanteri-Minet M, Fontaine D. **Poor effectiveness of occipital nerve stimulation in treating refractory neuropathic facial pain: a case series.** Neuromodulation 2025 epub [PubMed](#) [Free Full Text](#)
8. George TK, Tria AJ. **Peripheral nerve stimulation for acute vertebral compression fracture pain: a case report.** Pain Med Case Rep 2025 9(2):127-130 [PubMed](#) [Free Full Text](#)
9. Gilmore CA, Deer TR, Desai MJ, Li S, DePalma MJ, Cohen SP, Swan BD, McGee MJ, Boggs JW. **Four-year follow-up from a prospective, multicenter study of percutaneous 60-day peripheral nerve stimulation for chronic low back pain.** Pain Ther 2025 epub [PubMed](#) [Free Full Text](#)

10. Hou B, Qadri YJ, Bansal V. **Placement of peripheral nerve stimulation device in single limb controls long-term pain in pediatric patient with 4-limb amputation: a case report.** AA Pract 2025 19(4):e01959 [PubMed](#)
11. Kim DY, Yeom JS, Yun YR, Lee JS, Ha WJ, Ha IH, Lee YJ, Kim D. **Percutaneous tibial nerve stimulation for neurogenic bladder due to severe lumbosacral disc herniation.** J Clin Med 2025 14(7):2262 [PubMed](#) [Free Full Text](#)
12. Lim YS, Kim JH, Kim J, Hoang M, Kang W, Koh M, Choi WH, Park S, Jeong U, Kim DH, Park SM. **Precise control of tibial nerve stimulation for bladder regulation via evoked compound action potential feedback mechanisms.** Nat Commun 2025 16(1):4115 [PubMed](#) [Free Full Text](#)
13. Lucente V, Morrisroe S, Schiff W, Barber N. **A prospective study on the effectiveness of sensory and sub-sensory stimulation amplitudes using eCoin® implantable tibial nerve stimulation in reducing urgency urinary incontinence episodes and enhancing quality of life.** Cureus 2025 17(3):e81121 [PubMed](#) [Free Full Text](#)
14. Luthra K, Jain A, Darwish Y, Suri P, Chhatre A. **Radiofrequency probe guidance in peripheral nerve stimulator placement for complex anatomy: a case report.** Pain Med Case Rep 2025 9(1):75-79 [PubMed](#) [Free Full Text](#)
15. Martini A, Schweiger V, Villagrossi L, Patton A, Poni G, Polati E. **Externally powered peripheral nerve stimulation with a separate receiver at the brachial plexus nerve for the treatment of pain due to metastatic invasion from advanced breast cancer: a case report.** Pain Med Case Rep 2025 9(1):27-31 [PubMed](#) [Free Full Text](#)
16. Shatkin-Margolis A, Wang L, Nik-Ahd F, Dreyfuss LD, Covinsky K, Boscardin WJ, Suskind AM. **Minimally invasive overactive bladder therapy after prolapse surgery.** Urogynecology (Phila) 2025 epub [PubMed](#)
17. Tokas G, Mavridis I, Birbilis T. **Treatment of chronic refractory coccydynia with peripheral nerve field stimulation: a novel case.** Folia Med (Plovdiv) 2025 67(1):e127238 [PubMed](#) [Free Full Text](#)

Sacral Nerve Stimulation (now 1300 citations)

1. Cohen T, Huang Z, Aalami-Harandi A, Park J, Sbrollini K, Braun N, Weissbart S, Tam J, Kim J. **Revision rates for rechargeable versus non-rechargeable sacral neuromodulation devices in the management of overactive bladder.** Neurourol Urodyn 2025 epub [PubMed](#)
2. Drissi F, Di Giuseppe M, Korkmaz C, Bourreille A, Tréton X, Ris F, Meurette G. **Sacral neuromodulation improves functional outcome and quality of life in patients with pouch dysfunction after pan proctocolectomy for ulcerative colitis.** Tech Coloproctol 2025 29(1):105 [PubMed](#) [Free Full Text](#)
3. Hacibey I, Halis A. **Assessment of artificial intelligence performance in answering questions on onabotulinum toxin and sacral neuromodulation.** Investig Clin Urol 2025 66(3):188-193 [PubMed](#) [Free Full Text](#)
4. Jaworski EM, Sanderson DJ, Gevelinger M, Doyle PJ. **Changes in the patient-reported outcomes measurement information system (PROMIS) scores**

following sacral neuromodulation for lower urinary tract symptoms. Curr Urol 2024 18(4):318-322 [PubMed](#) [Free Full Text](#)

5. Kobberø H, Krhut J, Zvara P, Pedersen TB, Fode M, Nielsen HH, Poulsen MH. **Sacral neuromodulation for neurogenic lower urinary tract, bowel and sexual dysfunction in patients with multiple sclerosis: a pilot trial.** Neurourol Urodyn 2025 epub [PubMed](#) [Free Full Text](#)
6. Shatkin-Margolis A, Wang L, Nik-Ahd F, Dreyfuss LD, Covinsky K, Boscardin WJ, Suskind AM. **Minimally invasive overactive bladder therapy after prolapse surgery.** Urogynecology (Phila) 2025 epub [PubMed](#)
7. Trump T, Anis O, Goldman HB, Chow PM. **Outcomes of sacral neuromodulation and intradetrusor onabotulinum toxin in the management of stroke associated urinary incontinence.** Int Neurourol J 2025 29(1):10-16 [PubMed](#) [Free Full Text](#)

Spinal Cord Stimulation (now 3542 citations)

1. Angeli CA, Rejc E, Ugiliweneza B, Boakye M, Forrest GF, Brockman K, Vogt J, Logsdon B, Fields K, Harkema SJ. **Activity-based recovery training with spinal cord epidural stimulation improves standing performance in cervical spinal cord injury.** J Neuroeng Rehabil 2025 22(1):101 [PubMed](#) [Free Full Text](#)
2. Baig SM, Adaralegbe A, Gomez S, Paulet T, Apai C, Castiglione M, Adaralegbe A, Amponsah A. **Spinal cord stimulator implantation in a patient with diffuse idiopathic skeletal hyperostosis: case report.** Pain Med Case Rep 2025 9(2):85-87 [PubMed](#) [Free Full Text](#)
3. Chang MS, Adeniyi B, Crandall DG. **Spinal cord stimulators adversely affect outcomes in spinal deformity surgery. a retrospective case-control study.** Global Spine J 2025 epub [PubMed](#) [Free Full Text](#)
4. Falowski S, Dorsi MJ, Heros R, Sales R, Tavel E, Lansford T, Weinand ME, Baxi N, Garber J, Forage J, Telfeian AE, Souheil H, Gilligan C, Deer T, Levy R, Jameson J, Moeschler S, Duncan J, Lim C, Desai M, Pilitsis J, Okaro U, Yue J. **Paddle leads for the treatment of nonsurgical back pain-the DISTINCT study.** Pain Pract 2025 25(5):e70033 [PubMed](#) [Free Full Text](#)
5. Fawaz R, De Laurentis C, Thomas A, Curtet M, Giner AM, Duraffourg M. **Spinal cord stimulation and intrathecal pump infusion management in para-athletes: a retrospective case series.** Am J Phys Med Rehabil 2025 epub [PubMed](#)
6. Finney JN, Levy IR, Chandrasekaran S, Collinger JL, Boninger ML, Gaunt RA, Helm ER, Fisher LE. **Techniques to mitigate lead migration for percutaneous trials of cervical spinal cord stimulation.** Front Surg 2025 12:1458572 [PubMed](#) [Free Full Text](#)
7. George DD, Shao M, Brown JM, DiMarzio M, Weinand ME, Larson PS, Kasoff WS, Pilitsis JG. **Exploring rates of functional neurosurgery procedures in the hispanic population: a single-institution analysis from 2017 to 2024.** Neuromodulation 2025 epub [PubMed](#)

8. Hu X, Ye X, Wang L, Wu Y, Zhou Z, Xu S, He R, Jiang Z. **Comparison of the treatment efficacy of herpes zoster neuralgia with temporary spinal cord stimulation at different sites.** Front Neurol 2025 epub [PubMed Free Full Text](#)
9. Jiang C, Xu X, Guan S, Chen L, Chen R, Cai X. **Analysis of the effects of combined electrical spinal cord stimulation and pregabalin therapy in patients with herpes zoster trigeminal neuralgia.** J Clin Neurosci 2025 136:111224 [PubMed](#)
10. Kiepper AL, Morgan T, Mallard CJ. **Pain relief in mitochondrial disorders: use of spinal cord stimulation in a patient with NARP syndrome.** Pain Med Case Rep 2025 9(1):67-69 [PubMed Free Full Text](#)
11. Kogias SS, O'Brien JA, Robertson RV, Peng A, Tinoco-Mendoza FA, Ramachandran A, Henderson LA, Austin PJ. **10-kHz high-frequency spinal cord stimulation significantly reduces proinflammatory cytokines and distinct populations of T lymphocytes in patients with persistent spinal pain syndrome type 2.** Neuromodulation 2025 epub [PubMed Free Full Text](#)
12. Li Y, Wang J, Chen Y, Qiu F, Sun T, Zhao X. **Comparative long-term efficacy of short-term spinal cord stimulation versus bipolar pulsed radiofrequency for refractory postherpetic neuralgia: a 24 month prospective study.** Eur J Med Res 2025 30(1):272 [PubMed Free Full Text](#)
13. Murray LM, McIntosh JR, Goldsmith JA, Wu YK, Liu M, Sanford SP, Joiner EF, Mandigo C, Virk MS, Tyagi V, Carmel JB, Harel NY. **Timing-dependent synergies between noninvasive motor cortex and spinal cord stimulation in chronic cervical spinal cord injury.** medRxiv [preprint before peer review] 2025 epub [PubMed Free Full Text](#)
14. Petersen EA, Sills SM, Stauss TG, Province-Azalde R, Jaasma MJ, Edgar DR, White JL, Scowcroft JA, Yu C, Xu J, Guirguis MN, Amirdelfan K, DiBenedetto DJ, Nairizi A, Lad SP, Mehta ND, Sayed D, Sethi KA, Benducci S, Bharara M. **Long-term efficacy of 10 kHz spinal cord stimulation in managing painful diabetic neuropathy: a post-study survey.** Pain Pract 2025 25(5):e70023 [PubMed Free Full Text](#)
15. Royds J. **Management and cost of spinal cord stimulator explants due to infection.** Neuromodulation 2025 epub [PubMed Free Full Text](#) [PubMed](#)
16. Russell J, Hamilton N, Hamilton J. **A semi-structured interview predicts spinal cord stimulator implantation in patients with chronic pain.** J Clin Psychol Med Settings 2025 epub [PubMed](#)
17. Singh N, Lam L, Husu EN. **Virtual clinic diagnosis of fractured spinal cord stimulator leads in a patient lacking direct physician access - a novel case report.** Pain Med Case Rep 2025 9(1):33-36 [PubMed Free Full Text](#)
18. Smet I, Billet B, Germonpré PJ, Peña I, de la Osa AM, Keiner D, Polati E, Lindblom P, Minne V, Chowdhury S, Banducci SE, Dhamne S, Tamosauskas R, Park N, Lalkhen A, Vajramani G. **Pain, quality of life, and function in chronic intractable leg pain were substantially improved with 10kHz spinal cord stimulation in a multicentre European study.** Eur Spine J 2025 epub [PubMedFree Full Text](#)
19. Tanei T, Maesawa S, Nishimura Y, Nagashima Y, Ishizaki T, Ito Y, Hashida M, Suzuki T, Yamamoto S, Saito R. **Spinal cord stimulation for intractable pain**

- caused by sacroiliac joint dysfunction: a case report.** NMC Case Rep J 2025 12:127-132 [PubMed](#) [Free Full Text](#)
20. Walton E, Zhitny VP, Dixon B, Jannoud R, Rahman I. **Lead migration and postdural puncture headache following spinal cord stimulator placement in patient with cough: a case report.** Ann Med Surg (Lond) 2025 87(4):2426-2429 [PubMed](#) [Free Full Text](#)
21. Wen J, Dwyer S, Badhan S, Khalil R, Elahi F. **A rare case of spinal cord injury after uncomplicated implantation of a spinal cord stimulator: a case report.** Pain Med Case Rep 2025 9(2):137-141 [PubMed](#) [Free Full Text](#)
22. Yuan M, Kuang A, Hao D. **Bridging antiplatelet therapy with cangrelor in spinal cord stimulator trial and implant for patient with refractory angina: a case report.** Pain Med Case Rep 2025 9(2):147-150 [PubMed](#) [Free Full Text](#)
23. Zhu C, Jeong KS, Edhi M, Rogness V, Saab CY, Esteller R. **Spinal cord stimulation using time-dynamic pulses achieves longer reversal of allodynia compared to tonic pulses in a rat model of neuropathic pain.** Front Pain Res (Lausanne) 2025 6:1541078 [PubMed](#) [Free Full Text](#)

THANK YOU TO OUR SUPPORTERS!

A full list of financial donors over time is available [here](#).

Individual supporters in 2025:

Richard B. North, MD
Sean Slee, PhD
SuEarl McReynolds
Terry Daglow

Nonprofit support in 2025:

The Neuromodulation Foundation, Inc. (WIKISTIM's parent organization)

Industry support in 2025:

Nevro

EDITORIAL BOARD

Editor-in-chief

[Richard B. North, MD](#)

Section editors

[Thomas Abell, MD](#), Gastric Electrical Stimulation
Tracy Cameron, PhD, Peripheral Nerve Stimulation
[Roger Dmochowski, MD](#), Sacral Nerve Stimulation
Robert Foreman, MD, PhD, Experimental Studies
[Elliot Krames, MD](#), Dorsal Root Ganglion Stimulation
[Bengt Linderöth, MD, PhD](#), Experimental Studies
[Richard B. North, MD](#), Spinal Cord Stimulation

B. Todd Sitzman, MD, MPH, At Large
[Konstantin Slavin, MD, PhD](#), Deep Brain Stimulation
[Kristl Vonck, MD, PhD](#), Deep Brain Stimulation for Epilepsy
Richard Weiner, MD, Peripheral Nerve Stimulation
[Jonathan Young, MD](#), Noninvasive Brain Stimulation
To be determined, Vagus Nerve Stimulation

Managing editor

[Jane Shipley](#)

Disclosure

WIKISTIM includes citations for indications that are or might be considered off-label in the United States.

A reminder about personal information

We never share our registrants' personal information or email addresses.

Contact

The Neuromodulation Foundation, Inc.
822 Guilford Avenue #102
Baltimore, MD 21202

wikistim@gmail.com

Deep Brain Stimulation (now 9017 citations)

1. Abkur T, Boogers A, Grippe T, Isaacs DA, Malaty IA, Munhoz RP, Bhatia KP, Hart LA, Fasano A, Kalia S, Lang AE, Ganos C. **Tics and Parkinson's disease: clinical and pathophysiological insights from a rare syndromic association.** Mov Disord Clin Pract 2025 epub [PubMed Free Full Text](#)
2. Acerbo E, Jegou A, Lagarde S, Pizzo F, Makhalova J, Trébuchon A, Bénar CG, Bartolomei F, Carron R. **Frequency-specific alterations in brain connectivity induced by pulvinar stimulation.** Epilepsia 2025 epub [PubMed Free Full Text](#)
3. Al Banna Q, Lalgudi Srinivasan H, Knight JC, Samuel M, Bodi I, Ashkan K. **Fatigue fracture of a DBS extension cable: a pictorial review.** Ann R Coll Surg Engl 2025 epub [PubMed Free Full Text](#)
4. Ayerbe J, Barroso B, García-Ruiz PJ, Pastor-Nieto MA, Sastre J, Cabrera-Montes J. **Pulse-generator rejection of probable allergic origin in deep brain stimulation: a rare complication successfully managed with a polytetrafluoroethylene-covered device.** Mov Disord Clin Pract 2025 epub [PubMed](#)
5. Babeliowsky WA, Meulepas MA, Buijink AWG, de Bie RMA, van Rootselaar AF. **How to treat orthostatic tremor - cohort study and systematic review.** Clin Park Relat Disord 2025 12:100318 [PubMed Free Full Text](#)

6. Bahniers BH, Goede LL, Zvarova P, Meyer GM, Butenko K, Lofredi R, Rajamani N, Schaper FLWVJ, Neudorfer C, Hollunder B, Pijar J, Madan S, Hart LA, Sure M, Steina A, Rassoulou F, Hartmann CJ, Butz M, Hirschmann J, Vesper J, Faust K, Schneider GH, Sander T, Fox MD, Miller KJ, Schnitzler A, Kühn AA, Florin E, Horn A. **The deep brain stimulation response network in Parkinson's disease operates in the high beta band.** medRxiv [preprint before peer review] 2025 epub [PubMed Free Full Text](#)
7. Baizabal-Carvallo JF, Alonso-Juarez M, Fekete R. **Head tremor in Parkinson's disease, clinical associations and response to therapy.** Clin Park Relat Disord 2025 12:100328 [PubMed Free Full Text](#)
8. Barbe N, Connolly M, Devergnas A, Torrès N, Hervault M, Bonis M, Billères M, Chabardes S, Piallat B. **Toward an automatic classification of the different stages of sleep: exploring patterns of neural activity in the subthalamic nucleus.** Eur J Neurosci 2025 61(7):e70107 [PubMed Free Full Text](#)
9. Bautista AND, Rosales RL, Diesta CCE, Oropilla JQ, Westenberger A, Brüggemann N, Klein C. **X-linked dystonia-parkinsonism in a manifesting female: first case report of deep brain stimulation.** Mov Disord Clin Pract 2025 epub [PubMed](#)
10. Bhusal B, Sanpitak PP, Jiang F, Richardson J, Seiberlich N, Rosenow JM, Elahi B, Golestanirad L. **Comparative study of radiofrequency heating in deep brain stimulation devices during MRI at 1.5 T and 0.55 T: challenging the assumption of safety at low field strengths.** Magn Reson Med 2025 epub [PubMed Free Full Text](#)
11. Binns TS, Köhler RM, Vanhoecke J, Chikermane M, Gerster M, Merk T, Pellegrini F, Busch JL, Habets JGV, Cavallo A, Beyer JC, Al-Fatly B, Li N, Horn A, Krause P, Faust K, Schneider GH, Haufe S, Kühn AA, Neumann WJ. **Shared pathway-specific network mechanisms of dopamine and deep brain stimulation for the treatment of Parkinson's disease.** Nat Commun 2025 16(1):3587 [PubMed Free Full Text](#)
12. Bispo FMM, Dornas FM, Viana YG, Rodrigues RB, Vasconcelos JM, Penholate M, Lana RC, Polese JC. **Functioning, emotion, and pain perception of individuals with Parkinson's disease after deep brain stimulation surgery.** J Bodyw Mov Ther 2025 42:763-768 [PubMed](#)
13. Brinkerhoff S, Nakhmani A, Varghese A, Gordon C, Gonzalez CL, Bentley JN, Holland MT, Walker HC. **Paired deep brain stimuli elicit short-term facilitation in globus pallidus interna and subthalamic nucleus.** Mov Disord 2025 epub [PubMed Free Full Text](#)
14. Butler M, Askari A, Zhu B, Wyant K, Leventhal D, Patil PG, Chou KL. **Ventral STN stimulation is associated with improved axial motor outcomes in Parkinson's disease.** J Neural Transm (Vienna) 2025 epub [PubMed Free Full Text](#)
15. Cabrera LY, Bluhm R, McCright AM, Achtyes ED. **Is the treatment worse than the disease?: Key stakeholders' views about the use of psychiatric electroceutical interventions for treatment-resistant depression.** Neuroethics 2025 18(1):1 [PubMed Free Full Text](#)
16. Candeias da Silva C, Fung WKW, Al-Shorafat DM, Loh A, Santyr B, Kalia SK, Lozano AM, Fasano A. **Stimulation-induced dyskinesia in STN DBS patients.** Mov Disord Clin Pract 2025 epub [PubMed](#)
17. Capilla RR, Hurley AM, Kumaravelu K, Peters JJ, Lee HJ, Turner DA, Grill WM, Schmidt SL. **Low-frequency dual target deep brain stimulation may relieve**

parkinsonian symptoms. medRxiv [preprint before peer review] 2025
epub [PubMed Free Full Text](#)

18. Choi IS, Kim J, Choi JH, Kim EM, Choi JW, Rah JC. **Modulation of premotor cortex excitability mitigates the behavioral and electrophysiological abnormalities in a Parkinson's disease mouse model.** Prog Neurobiol 2025
249:102761 [PubMed Free Full Text](#)
19. Cui B, Mocchi MM, Metzger BA, Kalva P, Magnotti JF, Fiedorowicz JG, Waters A, Kovach CK, Reed YY, Mathura RK, Steger C, Pascuzzi B, Kanja K, Veerakumar A, Tiruvadi V, Crowell A, Denison L, Rozell CJ, Pouratian N, Goodman W, Riva Posse P, Mayberg HS, Bijanki KR. **Affective bias predicts changes in depression during deep brain stimulation therapy.** Front Hum Neurosci 2025
19:1539857 [PubMed Free Full Text](#)
20. Dabboucy B, Hazrati R, Langlois M, Prudhomme M. **Tremor associated with Klinefelter syndrome: report of a case treated by deep brain stimulation and systematic review of the literature.** Neuromodulation 2025 epub [PubMed](#)
21. Domínguez-Carral J, Reinhard C, Soliani L, Cif L, Ortigoza-Escobar JD. **Exploring the impact of dyskinetic crises in GNAO1-related disorders: a survey for parents and caregivers.** Mov Disord Clin Pract 2025 epub [PubMed](#)
22. Fruett da Costa PR, Oliveira de Paula G, de Oliveira HM, de Siqueira Silva AP, Oliveira Caetano G, Pilitsis JG, Lopes Alho EJ, Franceschini PR, da Silva Freitas T, Assumpção de Monaco B. **Cyanoacrylate adhesive with titanium plate fixation for deep brain stimulation leads: a case series and technical note.** Oper Neurosurg (Hagerstown) 2025 epub [PubMed](#)
23. George DD, Shao M, Brown JM, DiMarzio M, Weinand ME, Larson PS, Kasoff WS, Pilitsis JG. **Exploring rates of functional neurosurgery procedures in the Hispanic population: a single-institution analysis from 2017 to 2024.** Neuromodulation 2025 epub [PubMed](#)
24. Gerber LM, Shulman KS, Wright MS, Schiff ND, Fins JJ. **Qualitative analysis of symptoms from the central thalamic deep brain stimulation trial for traumatic brain injury.** NeuroRehabilitation 2025 56(2):143-151 [PubMed](#)
25. Grennan I, Perry B, Verghese A, Jones M, Härmson O, McNamara CG, Sharott A. **Phase-dependent closed-loop deep brain stimulation of the fornix provides bidirectional manipulation of hippocampal theta oscillations.** Brain Stimul 2025 epub [PubMed Free Full Text](#)
26. Hasimoglu O, Hanoglu T, Karacoban TO, Altinkaya A, Erkan B, Tugcu B. **Analysis of intracerebral abscesses in deep brain stimulation and association with hardware-related wound complications.** J Formos Med Assoc 2025
epub [PubMed Free Full Text](#)
27. Hasimoglu O, Karaçoban TÖ, Hanoglu T, Geylan NB, Altinkaya A, Erkan B, Postalci LŞ, Tugcu B. **Anatomical determinants of STN coordinate shift in idiopathic Parkinson's disease DBS surgery.** CNS Neurosci Ther 2025
31(4):e70307 [PubMed Free Full Text](#)
28. Imbalzano G, Montanaro E, Ledda C, Donetto F, D'Angelo F, Campisi C, Artusi CA, Romagnolo A, Rizzone MG, Bozzali M, Lopiano L, Zibetti M. **Theta-gamma subthalamic stimulation for verbal fluency in Parkinson's disease: a randomized, crossover trial.** Mov Disord 2025 epub [PubMed Free Full Text](#)

29. Jaffee S, Gupta N, Kramer D, Kusyk DM, Valeriano J, Merkley A, Kite T, Arora S, Grover P, Whiting AC. **Stereo-electroencephalography in the setting of a preexisting deep brain stimulation device: illustrative case.** J Neurosurg Case Lessons 2025 9(17):CASE24854 [PubMed Free Full Text](#)
30. Jana S, Bhattacharyya PK, Malekmohammadi M, Lin J, Lowe M, Heimbuch IS, Machado A, Pouratian N, Jones SE. **Increased BOLD activation of response inhibition task-relevant network with subthalamic nucleus deep brain stimulation in patients with Parkinson's disease: a pilot study.** Parkinsonism Relat Disord 2025 135:107835 [PubMed](#)
31. Johnson C, Miller G, Shah S, Stevens C, Thomas N, Toms J, Arevalo O. **Unveiling patterns of peri-lead edema after deep brain stimulation: a retrospective review of clinical and demographic factors.** Neuroradiology 2025 epub [PubMed Free Full Text](#)
32. Kaur H, Goble TJ, Fenoy A, Ramdhani RA. **Deep brain stimulation for post-hypoxic myoclonus: a case correlating local field potentials to clinical outcome.** Tremor Other Hyperkinet Mov (NY) 2025 15:16 [PubMed Free Full Text](#)
33. Khosravi S, Moosavian T, Salehpour S, Habibi SAH, Alavi A, Rohani M. **Clinical and genetic characterization of Woodhouse-Sakati syndrome in Iranian patients: a case series.** J Mov Disord 2025 epub [PubMed Free Full Text](#)
34. Kim J, Shin HK, Kim JH, So HY, Kim MS, Jo S, Chung SJ, Hong SH, Jeon SR. **Delayed hemorrhagic complications following deep brain stimulation surgery for Parkinson's disease: importance of comprehensive presurgical evaluation.** J Clin Neurosci 2025 136:111237 [PubMed](#)
35. Kim MJ, Butala A, Salimpour Y, Sawa A, Figuee M, Choi KS, Schretlen D, Mills KA, Cascella N. **Effective stimulation sites and networks for substantia nigra pars reticulata deep brain stimulation for auditory verbal hallucinations in schizophrenia.** medRxiv [preprint before peer review] 2025 epub [PubMed Free Full Text](#)
36. Lamoš M, Bočková M, Missey F, Lubrano C, de Araújo E Silva M, Trajlínek J, Studnička O, Daniel P, Carron R, Jirsa V, Chrastina J, Jančálek R, Glowacki ED, Cassara A, Neufeld E, Rektorová I, Williamson A. **Noninvasive temporal interference stimulation of the subthalamic nucleus in Parkinson's disease reduces beta activity.** Mov Disord 2025 epub [PubMed Free Full Text](#)
37. Lannon M, Martyniuk A, Aminnejad M, Hatoum R, Paoloni D, Hall D, Farrokhyar F, Bhandari M, Kalia SK, Sharma S. **Mixed methods survey to identify barriers to accessing deep brain stimulation for movement disorders in Canada.** Can J Neurol Sci 2025 epub 1-42 [PubMed](#)
38. Liu S, Qi Y, Hu S, Wei N, Zhang J, Zhu J, Wu H, Hu H, Yang Y, Wang Y. **A habenula neural biomarker simultaneously tracks weekly and daily symptom variations during deep brain stimulation therapy for depression.** IEEE J Biomed Health Inform 2025 epub [PubMed](#)
39. Liu Y, Zhang Q, Zhang H, Xiang Y, Wang H. **Research hotspots and frontiers of neuromodulation technology in the last decade: a visualization analysis based on the Web of Science database.** Front Hum Neurosci 2025 19:1574721 [PubMed Free Full Text](#)

40. Loehrer PA, Freigang J, Bopp MHA, Calvano A, Dafsari HS, Wichmann J, Seidel A, Aberle C, Knake S, Nimsky C, Timmermann L, Belke M, Pedrosa DJ. **Microstructure is associated with motor outcomes following deep brain stimulation in Parkinson's disease.** NPJ Parkinsons Dis 2025 11(1):81 [PubMed Free Full Text](#)
41. Lu W, Rao M, Lu L, Li P, Dou X, Bian J, Deng X. **Relationship between preoperative high arterial blood lactate level and delirium after deep brain stimulation surgery in Parkinson's disease.** Front Aging 2025 6:1538012 [PubMed Free Full Text](#)
42. Luppi AI, Uhrig L, Tasserie J, Shafiei G, Muta K, Hata J, Okano H, Golkowski D, Ranft A, Ilg R, Jordan D, Gini S, Liu ZQ, Yee Y, Signorelli CM, Cofre R, Destexhe A, Menon DK, Stamatakis EA, Connor CW, Gozzi A, Fulcher BD, Jarraya B, Misic B. **Comprehensive profiling of anaesthetised brain dynamics across phylogeny.** bioRxiv [preprint before peer review] 2025 epub [PubMed Free Full Text](#)
43. Magnant GA, Darbin O, McKee K, Martino A. **Management of cutaneous scalp complications in deep brain stimulation: illustrative cases.** J Neurosurg Case Lessons 2025 9(18):CASE24833 [PubMed Free Full Text](#)
44. Maith O, Apenburg D, Hamker F. **Pallidal deep brain stimulation enhances habitual behavior in a neuro-computational basal ganglia model during a reward reversal learning task.** Eur J Neurosci 2025 61(9):e70130 [PubMed Free Full Text](#)
45. Martinez Nunez AE, Kusyk DM, Wong JK, Okun MS, Hilliard JD. **Lesioning through a directional deep brain stimulation lead in the subthalamic nucleus.** Tremor Other Hyperkinet Mov (NY) 2025 15(1):12:1-6 [PubMed Free Full Text](#)
46. McAuley MD, Dean JM, Heming E, Ionova AA, Onabajo CA, Solie M, Stephenson SA, Boehnke SE. **Parkinson's disease participant-led research on the impact of deep brain stimulation frequency.** J Parkinsons Dis 2025 epub [PubMed Free Full Text](#)
47. Mehta K, Noecker AM, McIntyre CC. **Comparison of structural connectomes for modeling deep brain stimulation pathway activation.** Neuroimage 2025 312:121211 [PubMed Free Full Text](#)
48. Ollivier T, Pinto S, Rolland AS, Cailliau E, Touzet G, Thobois S, Eusebio A, Hainque E, Rouaud T, Drapier S, Guehl D, Maltete D, Anheim M, Lagha Boukbiza O, Giordana C, Tir M, Hopes L, Hubsch C, Jarraya B, Marques A, Brefel C, Rascol O, Corvol JC, Benatru I, Defebvre L, Devos D, Moreau C; French PREDISTIM study group. **Parkinson's disease, speech and neurosurgery.** Brain Behav 2025 15(5):e70101 [PubMed Free Full Text](#)
49. Paracka L, Heldmann M, Lange F, Saryyeva A, Klietz M, Münte TF, Kopp B, Wegner F, Krauss JK. **Subthalamic nucleus dynamics during executive functioning: Insights from local field potentials in Parkinson's disease.** Neuroscience 2025 574:65-73 [PubMed Free Full Text](#)
50. Rupich K, Schlegel A, Baltuch G, Clark-Cutaia MN. **Deep brain stimulator surgery does not require postoperative intensive care unit admission.** J Neurosci Nurs 2025 epub [PubMed](#)
51. Saad S, Abouelnaga AF, Abass M, Obydah W, Kiwan NA, Ammar OA, Abulseoud OA, Hussein AM. **Effect of deep brain stimulation for lateral hypothalamic area on memory decline and hippocampal neurofilaments expression dysfunctions in aged rats.** Neuroreport 2025 epub [PubMed](#)

52. Sanrey E, Grasso M, Brethome M, Chan-Seng E, Gil V, Coubes P, Poulen G. **Quality of life after deep brain stimulation: a primary versus secondary dystonia comparative study.** Stereotact Funct Neurosurg 2025 epub 1-12 [PubMed](#)
53. Sarica C, Yamamoto K, Iorio-Morin C, Germann J, Yang AZ, Santyr B, Colditz M, Vetkas A, Fomenko A, Davidson B, Schmidt F, Grippe T, Samuel N, Zemmar A, Flouty O, Cheyuo C, Darmani G, Chen R, Boutet A, Neudorfer C, Hodaie M, Kalia SK, Munhoz RP, Fasano A, Lozano AM. **Bilateral focused ultrasound thalamotomy for essential tremor: clinical outcomes compared to bilateral deep brain stimulation and probabilistic lesion mapping.** Mov Disord 2025 epub [PubMed Free Full Text](#)
54. Scheller U, Paschen S, Maass F, van Riesen C. **Deep brain stimulation of the VIM for tremor in a patient with POLR3A-associated cerebellar syndrome without long-term benefit.** Tremor Other Hyperkinet Mov (NY) 2025 epub 15:15 [PubMed Free Full Text](#)
55. Seddighfar M, Bahmani Z, Haghparast A. **Infralimbic deep brain stimulation: the impact of frequency and timing on extinction and reinstatement of morphine-seeking behaviors in male rats.** Prog Neuropsychopharmacol Biol Psychiatry 2025 139:111383 [PubMed](#)
56. Seilheimer RL, Qiu L, Rocchio G, Nho YH, Campos G, Pesaran B, Williams NR, Rolle CE, Buch VP, Ganguly TM, Miller KJ, Cristancho M, Oathes DJ, Brown L, Scangos KW, Barbosa DAN, Halpern CH. **Stereo-encephalography-guided multi-lead deep brain stimulation for treatment-refractory obsessive compulsive disorder - study design and individualized surgical targeting approach.** medRxiv [preprint before peer review] 2025 epub [PubMed Free Full Text](#)
57. Shin D, Lopez-Gonzalez MA. **The impact of sociodemographic factors and surgical modalities on deep brain stimulation for Parkinson's disease.** Surg Neurol Int 2025 epub 16:91 [PubMedFree Full Text](#)
58. Singh S, Armstrong C, Melamed SE, Galligan K, Han M, DiGiovine M, Kessler SK, Kennedy BC. **Safety profile of intracranial neuromodulation for drug-resistant epilepsy in children.** J Neurosurg Pediatr 2025 epub 1-9 [PubMed](#)
59. Soh C, Hervault M, Rohl AH, Greenlee JDW, Wessel JR. **Precisely-timed outpatient recordings of subcortical local field potentials from wireless streaming-capable deep-brain stimulators: a method and toolbox.** J Neurosci Methods 2025 418:110448 [PubMed](#)
60. Sultanova SG, Fedorova NV, Verugina NI, Smolentseva IG. **The effect of bilateral subthalamic nucleus deep brain stimulation on gait and balance in patients with Parkinson's disease.** Russian. Zh Nevrol Psikhiatr Im S S Korsakova 2025 125(3):94-101 [PubMed Free Full Text](#)
61. Tien R, Platt J, Mendlen M, Kern D, Ojemann S, Thompson J, Kramer D. **Neurons in human motor thalamus encode reach kinematics and positional errors related to braking.** Res Sq [preprint before peer review] 2025 epub [PubMed Free Full Text](#)
62. Timmermann O, Ojemann SG, Thompson JA, Treat L, Kern DS. **Case report of bilateral subthalamic nucleus deep brain stimulation in an adolescent TUBB4A patient: she can sit on a horse.** Mov Disord Clin Pract 2025 epub [PubMed](#)
63. Uchitel J, Lui A, Knowles J, Parker JJ, Phillips HW, Halpern CH, Grant GA, Buch VP, Hyslop A, Kumar KK. **Intracranial neuromodulation for pediatric drug-resistant**

epilepsy: early institutional experience. Front Surg 2025
12:1569360 [PubMed Free Full Text](#)

64. Vergne C, Madec M, Guzman R, Pascal J, Taub E, Bourgeois F, Hemm S. **In vitro assessment and comparison of a novel electromagnetic tracking system for stereotactic DBS surgery.** Ann Biomed Eng 2025 epub [PubMed Free Full Text](#)
65. Wan X, Shen J, Lin Z, Lin S, Wu Y, Li D. **Remote programming for deep brain stimulation among patients with isolated dystonia: patient attitudes and treatment effect.** Mov Disord Clin Pract 2025 epub [PubMed](#)
66. Wang S, Ma R, Yuan Q, Li H, Jiang C. **Efficient, robust, and accurate CNN predictor for neuronal activation in directional deep brain stimulation.** IEEE Trans Neural Syst Rehabil Eng 2025 33:1685-1694 [PubMed Free Full Text](#)
67. Weill C, Heymann S, Dayan R, Linetsky E, Bergman H, Israel Z, Arkadir D. **Compressive cervical myelopathy causing impaired gait after deep brain stimulation is not rare.** Mov Disord Clin Pract 2025 epub [PubMed Free Full Text](#)
68. Wu S, Cen Z, Zheng X, Xie F, Luo W. **Investigation of the impact of STN-DBS on Parkinson's disease patients with genetic risk factors/causes.** World Neurosurg 2025 epub [PubMed Free Full Text](#)
69. Xie S, Liu Y, Yang A, Meng F, Jiang C, Fang H, Han R, Zhang J, Shi L. **Scalp block improves electrophysiological stability and patient cooperation during deep brain stimulation surgery.** Sci Rep 2025 15(1):12596 [PubMed Free Full Text](#)
70. Xu J, Liu B, Shang G, Feng Z, Yang H, Chen Y, Yu X, Mao Z. **Efficacy and safety of bilateral deep brain stimulation (DBS) for severe Alzheimer's disease: a comparative analysis of fornix versus basal ganglia of Meynert.** CNS Neurosci Ther 2025 31(4):e70285 [PubMed Free Full Text](#)
71. Xu Z, Duan W, Yuan S, Zhang X, You C, Yu JT, Wang J, Li JD, Deng S, Shu Y. **Deep brain stimulation alleviates Parkinsonian motor deficits through desynchronizing GABA release in mice.** Nat Commun 2025 16(1):3726 [PubMed Free Full Text](#)
72. Yadala S, Zahoor S, Escalona-Vargas D, Palys V. **Acute disruption of cortical epileptiform discharges with thalamic stimulation.** J Clin Neurophysiol 2025 epub [PubMed](#)
73. Yalaz M, Höft M, Maling N, Butz M, Juárez Paz LM, Boe P, Bahnert BH, Schnitzler A, Helmers AK, Deuschl G. **Detection of deep brain stimulation lead position and orientation in patients using magnetoencephalography.** Clin Neurophysiol 2025 173:221-228 [PubMed Free Full Text](#)
74. Yamaguchi C, Anwar H, Lesko A, Kaber SM, Oliveria SF. **Sensorimotor physiological mapping during asleep deep brain stimulation lead placement with multichannel intraoperative neuromonitoring.** Oper Neurosurg (Hagerstown) 2025 epub [PubMed](#)
75. Younce JR, Norris SA, Ushe M, Perlmutter JS. **Functional connectivity and volumetrics improve outcome prediction for deep brain stimulation in Parkinson's disease.** Mov Disord Clin Pract 2025 epub [PubMed Free Full Text](#)
76. Zhao G, Cheng Y, Li G, Li L, Cong G, Zhao Q, Li F, Wu Y, Du C, Yan J, Wang M, Feng K, Yin S. **Exploring local and network effects of subthalamic stimulation on semantic verbal fluency in Parkinson's disease.** J Neurosurg 2025 epub 1-10 [PubMed](#)

Dorsal Root Ganglion Stimulation (still 299 citations)

Gastric Electrical Stimulation (still 531 citations)

Meta-Analysis (now 54 citations)

1. Abbas A, Sabet H, El-Moslemani M, Abo-Elnour DE, Olama SM, Saleh MGA, Awad H, Raslan AM. **From short-term relief to long-term management: a meta-analysis of temporary spinal cord stimulation and pulsed radiofrequency in postherpetic neuralgia.** Neuromodulation 2025 epub [PubMed](#)

Peripheral Nerve Stimulation (now 8904 citations)

1. Alonso B, Viscasillas J, Vlaminck L, Schauvliege S. **Feasibility of a simultaneous ultrasound (US) and peripheral nerve stimulation (PNS) guided interscalene brachial plexus injection in calves.** Vet J 2025 312:106360 [PubMed](#)
2. Arvin N, Barker A, Fechtel B, Cutrer M, Eshraghi Y. **Temporary peripheral nerve stimulation for complex regional pain syndrome type i in the upper extremity: a case report.** Pain Med Case Rep 2025 9(1):21-25 [PubMed](#) [Free Full Text](#)
3. Ashoush F, Abdelrahim A, Ali O, Kamali D, Harrison S, Reddy A, Elshazly W, Sultan M, Saafan T, Abounozha S, Ahmed M. **A randomized controlled trial comparing the efficacy of bilateral percutaneous tibial nerve stimulation versus biofeedback pelvic floor muscle training in the management of obstructed defecation syndrome.** Cureus 2025 17(3):e80885 [PubMed](#) [Free Full Text](#)
4. Asperti A, Peterson N, Casnovsky J, Gharib M. **Peripheral nerve stimulation at the spinoglenoid notch may have advantages over suprascapular notch - case report.** Pain Med Case Rep 2025 9(1):55-58 [PubMed](#) [Free Full Text](#)
5. Cady SR, Lambrecht JM, Dsouza KT, Dunning JL, Anderson JR, Malone KJ, Chepla KJ, Graczyk EL, Tyler DJ. **First-in-human implementation of a bidirectional somatosensory neuroprosthetic system with wireless communication.** J Neuroeng Rehabil 2025 22(1):90 [PubMed](#) [Free Full Text](#)
6. Chawla SA, Harrison KL, Walter LC, Yank V, Wang L, Suskind AM. **Specialist practices for managing persons living with dementia and urinary incontinence.** Int Urogynecol J 2025 epub [PubMed](#) [Free Full Text](#)
7. Ferrão Malheiro S, Beucier N, Leplus A, Lanteri-Minet M, Fontaine D. **Poor effectiveness of occipital nerve stimulation in treating refractory neuropathic facial pain: a case series.** Neuromodulation 2025 epub [PubMed](#) [Free Full Text](#)
8. George TK, Tria AJ. **Peripheral nerve stimulation for acute vertebral compression fracture pain: a case report.** Pain Med Case Rep 2025 9(2):127-130 [PubMed](#) [Free Full Text](#)
9. Gilmore CA, Deer TR, Desai MJ, Li S, DePalma MJ, Cohen SP, Swan BD, McGee MJ, Boggs JW. **Four-year follow-up from a prospective, multicenter study of percutaneous 60-day peripheral nerve stimulation for chronic low back pain.** Pain Ther 2025 epub [PubMed](#) [Free Full Text](#)
10. Hou B, Qadri YJ, Bansal V. **Placement of peripheral nerve stimulation device in single limb controls long-term pain in pediatric patient with 4-limb amputation: a case report.** A A Pract 2025 19(4):e01959 [PubMed](#)

11. Kim DY, Yeom JS, Yun YR, Lee JS, Ha WJ, Ha IH, Lee YJ, Kim D. **Percutaneous tibial nerve stimulation for neurogenic bladder due to severe lumbosacral disc herniation.** J Clin Med 2025 14(7):2262 [PubMed Free Full Text](#)
12. Lim YS, Kim JH, Kim J, Hoang M, Kang W, Koh M, Choi WH, Park S, Jeong U, Kim DH, Park SM. **Precise control of tibial nerve stimulation for bladder regulation via evoked compound action potential feedback mechanisms.** Nat Commun 2025 16(1):4115 [PubMed Free Full Text](#)
13. Lucente V, Morrisroe S, Schiff W, Barber N. **A prospective study on the effectiveness of sensory and sub-sensory stimulation amplitudes using eCoin® implantable tibial nerve stimulation in reducing urgency urinary incontinence episodes and enhancing quality of life.** Cureus 2025 17(3):e81121 [PubMed Free Full Text](#)
14. Luthra K, Jain A, Darwish Y, Suri P, Chhatre A. **Radiofrequency probe guidance in peripheral nerve stimulator placement for complex anatomy: a case report.** Pain Med Case Rep 2025 9(1):75-79 [PubMed Free Full Text](#)
15. Martini A, Schweiger V, Villagrossi L, Patton A, Poni G, Polati E. **Externally powered peripheral nerve stimulation with a separate receiver at the brachial plexus nerve for the treatment of pain due to metastatic invasion from advanced breast cancer: a case report.** Pain Med Case Rep 2025 9(1):27-31 [PubMed Free Full Text](#)
16. Shatkin-Margolis A, Wang L, Nik-Ahd F, Dreyfuss LD, Covinsky K, Boscardin WJ, Suskind AM. **Minimally invasive overactive bladder therapy after prolapse surgery.** Urogynecology (Phila) 2025 epub [PubMed](#)
17. Tokas G, Mavridis I, Birbilis T. **Treatment of chronic refractory coccydynia with peripheral nerve field stimulation: a novel case.** Folia Med (Plovdiv) 2025 67(1):e127238 [PubMed Free Full Text](#)

Sacral Nerve Stimulation (now 1300 citations)

1. Cohen T, Huang Z, Aalami-Harandi A, Park J, Sbröllini K, Braun N, Weissbart S, Tam J, Kim J. **Revision rates for rechargeable versus non-rechargeable sacral neuromodulation devices in the management of overactive bladder.** Neurourol Urodyn 2025 epub [PubMed](#)
2. Drissi F, Di Giuseppe M, Korkmaz C, Bourreille A, Tréton X, Ris F, Meurette G. **Sacral neuromodulation improves functional outcome and quality of life in patients with pouch dysfunction after pan proctocolectomy for ulcerative colitis.** Tech Coloproctol 2025 29(1):105 [PubMed Free Full Text](#)
3. Hacibey I, Halis A. **Assessment of artificial intelligence performance in answering questions on onabotulinum toxin and sacral neuromodulation.** Investig Clin Urol 2025 66(3):188-193 [PubMed Free Full Text](#)
4. Jaworski EM, Sanderson DJ, Gevelinger M, Doyle PJ. **Changes in the patient-reported outcomes measurement information system (PROMIS) scores following sacral neuromodulation for lower urinary tract symptoms.** Curr Urol 2024 18(4):318-322 [PubMed Free Full Text](#)
5. Kobberø H, Krhut J, Zvara P, Pedersen TB, Fode M, Nielsen HH, Poulsen MH. **Sacral neuromodulation for neurogenic lower urinary tract, bowel and sexual**

dysfunction in patients with multiple sclerosis: a pilot trial. Neurourol Urodyn 2025 epub [PubMed Free Full Text](#)

6. Shatkin-Margolis A, Wang L, Nik-Ahd F, Dreyfuss LD, Covinsky K, Boscardin WJ, Suskind AM. **Minimally invasive overactive bladder therapy after prolapse surgery.** Urogynecology (Phila) 2025 epub [PubMed](#)
7. Trump T, Anis O, Goldman HB, Chow PM. **Outcomes of sacral neuromodulation and intradetrusor onabotulinum toxin in the management of stroke associated urinary incontinence.** Int Neurourol J 2025 29(1):10-16 [PubMed Free Full Text](#)

Spinal Cord Stimulation (now 3542 citations)

1. Angeli CA, Rejc E, Ugiliweneza B, Boakye M, Forrest GF, Brockman K, Vogt J, Logsdon B, Fields K, Harkema SJ. **Activity-based recovery training with spinal cord epidural stimulation improves standing performance in cervical spinal cord injury.** J Neuroeng Rehabil 2025 22(1):101 [PubMed Free Full Text](#)
2. Baig SM, Adaralegbe A, Gomez S, Paulet T, Apai C, Castiglione M, Adaralegbe A, Amponsah A. **Spinal cord stimulator implantation in a patient with diffuse idiopathic skeletal hyperostosis: case report.** Pain Med Case Rep 2025 9(2):85-87 [PubMed Free Full Text](#)
3. Chang MS, Adeniyi B, Crandall DG. **Spinal cord stimulators adversely affect outcomes in spinal deformity surgery. a retrospective case-control study.** Global Spine J 2025 epub [PubMed Free Full Text](#)
4. Falowski S, Dorsi MJ, Heros R, Sales R, Tavel E, Lansford T, Weinand ME, Baxi N, Garber J, Forage J, Telfeian AE, Souheil H, Gilligan C, Deer T, Levy R, Jameson J, Moeschler S, Duncan J, Lim C, Desai M, Pilitsis J, Okaro U, Yue J. **Paddle leads for the treatment of nonsurgical back pain-the DISTINCT study.** Pain Pract 2025 25(5):e70033 [PubMed Free Full Text](#)
5. Fawaz R, De Laurentis C, Thomas A, Curtet M, Giner AM, Duraffourg M. **Spinal cord stimulation and intrathecal pump infusion management in para-athletes: a retrospective case series.** Am J Phys Med Rehabil 2025 epub [PubMed](#)
6. Finney JN, Levy IR, Chandrasekaran S, Collinger JL, Boninger ML, Gaunt RA, Helm ER, Fisher LE. **Techniques to mitigate lead migration for percutaneous trials of cervical spinal cord stimulation.** Front Surg 2025 12:1458572 [PubMed Free Full Text](#)
7. George DD, Shao M, Brown JM, DiMarzio M, Weinand ME, Larson PS, Kasoff WS, Pilitsis JG. **Exploring rates of functional neurosurgery procedures in the hispanic population: a single-institution analysis from 2017 to 2024.** Neuromodulation 2025 epub [PubMed](#)
8. Hu X, Ye X, Wang L, Wu Y, Zhou Z, Xu S, He R, Jiang Z. **Comparison of the treatment efficacy of herpes zoster neuralgia with temporary spinal cord stimulation at different sites.** Front Neurol 2025 epub [PubMed Free Full Text](#)
9. Jiang C, Xu X, Guan S, Chen L, Chen R, Cai X. **Analysis of the effects of combined electrical spinal cord stimulation and pregabalin therapy in patients with herpes zoster trigeminal neuralgia.** J Clin Neurosci 2025 136:111224 [PubMed](#)

10. Kiepper AL, Morgan T, Mallard CJ. **Pain relief in mitochondrial disorders: use of spinal cord stimulation in a patient with NARP syndrome.** Pain Med Case Rep 2025 9(1):67-69 [PubMed Free Full Text](#)
11. Kogias SS, O'Brien JA, Robertson RV, Peng A, Tinoco-Mendoza FA, Ramachandran A, Henderson LA, Austin PJ. **10-kHz high-frequency spinal cord stimulation significantly reduces proinflammatory cytokines and distinct populations of T lymphocytes in patients with persistent spinal pain syndrome type 2.** Neuromodulation 2025 epub [PubMed Free Full Text](#)
12. Li Y, Wang J, Chen Y, Qiu F, Sun T, Zhao X. **Comparative long-term efficacy of short-term spinal cord stimulation versus bipolar pulsed radiofrequency for refractory postherpetic neuralgia: a 24 month prospective study.** Eur J Med Res 2025 30(1):272 [PubMed Free Full Text](#)
13. Murray LM, McIntosh JR, Goldsmith JA, Wu YK, Liu M, Sanford SP, Joiner EF, Mandigo C, Virk MS, Tyagi V, Carmel JB, Harel NY. **Timing-dependent synergies between noninvasive motor cortex and spinal cord stimulation in chronic cervical spinal cord injury.** medRxiv [preprint before peer review] 2025 epub [PubMed Free Full Text](#)
14. Petersen EA, Sills SM, Stauss TG, Province-Azalde R, Jaasma MJ, Edgar DR, White JL, Scowcroft JA, Yu C, Xu J, Guirguis MN, Amirdelfan K, DiBenedetto DJ, Nairizi A, Lad SP, Mehta ND, Sayed D, Sethi KA, Benducci S, Bharara M. **Long-term efficacy of 10 kHz spinal cord stimulation in managing painful diabetic neuropathy: a post-study survey.** Pain Pract 2025 25(5):e70023 [PubMed Free Full Text](#)
15. Royds J. **Management and cost of spinal cord stimulator explants due to infection.** Neuromodulation 2025 epub [PubMed Free Full Text](#) [PubMed](#)
16. Russell J, Hamilton N, Hamilton J. **A semi-structured interview predicts spinal cord stimulator implantation in patients with chronic pain.** J Clin Psychol Med Settings 2025 epub [PubMed](#)
17. Singh N, Lam L, Husu EN. **Virtual clinic diagnosis of fractured spinal cord stimulator leads in a patient lacking direct physician access - a novel case report.** Pain Med Case Rep 2025 9(1):33-36 [PubMed Free Full Text](#)
18. Smet I, Billet B, Germonpré PJ, Peña I, de la Osa AM, Keiner D, Polati E, Lindblom P, Minne V, Chowdhury S, Banducci SE, Dhamne S, Tamosauskas R, Park N, Lalkhen A, Vajramani G. **Pain, quality of life, and function in chronic intractable leg pain were substantially improved with 10kHz spinal cord stimulation in a multicentre European study.** Eur Spine J 2025 epub [PubMedFree Full Text](#)
19. Tanei T, Maesawa S, Nishimura Y, Nagashima Y, Ishizaki T, Ito Y, Hashida M, Suzuki T, Yamamoto S, Saito R. **Spinal cord stimulation for intractable pain caused by sacroiliac joint dysfunction: a case report.** NMC Case Rep J 2025 12:127-132 [PubMed Free Full Text](#)
20. Walton E, Zhitny VP, Dixon B, Jannoud R, Rahman I. **Lead migration and postdural puncture headache following spinal cord stimulator placement in patient with cough: a case report.** Ann Med Surg (Lond) 2025 87(4):2426-2429 [PubMed Free Full Text](#)
21. Wen J, Dwyer S, Badhan S, Khalil R, Elahi F. **A rare case of spinal cord injury after uncomplicated implantation of a spinal cord stimulator: a case report.** Pain Med Case Rep 2025 9(2):137-141 [PubMed Free Full Text](#)

22. Yuan M, Kuang A, Hao D. **Bridging antiplatelet therapy with cangrelor in spinal cord stimulator trial and implant for patient with refractory angina: a case report.** Pain Med Case Rep 2025 9(2):147-150 [PubMed Free Full Text](#)
23. Zhu C, Jeong KS, Edhi M, Rogness V, Saab CY, Esteller R. **Spinal cord stimulation using time-dynamic pulses achieves longer reversal of allodynia compared to tonic pulses in a rat model of neuropathic pain.** Front Pain Res (Lausanne) 2025 6:1541078 [PubMed Free Full Text](#)

THANK YOU TO OUR SUPPORTERS!

A full list of financial donors over time is available [here](#).

Individual supporters in 2025:

Richard B. North, MD
Sean Slee, PhD
SuEarl McReynolds
Terry Daglow

Nonprofit support in 2025:

The Neuromodulation Foundation, Inc. (WIKISTIM's parent organization)

Industry support in 2025:

Nevro

EDITORIAL BOARD

Editor-in-chief

[Richard B. North, MD](#)

Section editors

[Thomas Abell, MD](#), Gastric Electrical Stimulation
Tracy Cameron, PhD, Peripheral Nerve Stimulation
[Roger Dmochowski, MD](#), Sacral Nerve Stimulation
Robert Foreman, MD, PhD, Experimental Studies
[Elliot Krames, MD](#), Dorsal Root Ganglion Stimulation
[Bengt Linderöth, MD, PhD](#), Experimental Studies
[Richard B. North, MD](#), Spinal Cord Stimulation
B. Todd Sitzman, MD, MPH, At Large
[Konstantin Slavin, MD, PhD](#), Deep Brain Stimulation
[Kristl Vonck, MD, PhD](#), Deep Brain Stimulation for Epilepsy
Richard Weiner, MD, Peripheral Nerve Stimulation
[Jonathan Young, MD](#), Noninvasive Brain Stimulation
To be determined, Vagus Nerve Stimulation

Managing editor

[Jane Shipley](#)

Disclosure

WIKISTIM includes citations for indications that are or might be considered off-label in the United States.

A reminder about personal information

We never share our registrants' personal information or email addresses.

Contact

The Neuromodulation Foundation, Inc.

822 Guilford Avenue #102

Baltimore, MD 21202

wikistim@gmail.com