



July 2021 News

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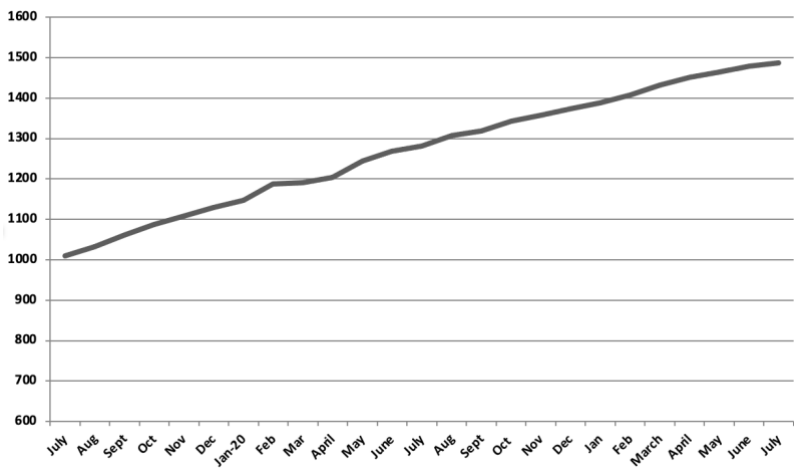
### THE STATUS OF NEW SECTIONS

A researcher used our online Discussion page to ask why we don't have a section on vagus nerve stimulation. The simple answer is that we want to add this section as soon as possible, but the present level of financial support for WIKISTIM does not cover the hours that will be required to add VNS. PubMed is our main source of citations for WIKISTIM, and a search today (June 30th) for "vagus nerve stimulation" yielded 3367 hits while a search for "vagal nerve stimulation" yielded an additional 1118. From our experience searching PubMed, these search results will not overlap completely, if at all, and it would take more than a month of full-time work to find, format, and upload the appropriate VNS citations to WIKISTIM. We are also eager to continue the initial work done by our Noninvasive Brain Stimulation editor so that we can get this section up and running.

In 1999, Dr. North published a commentary in Pain Forum (8:195-197) on the fallacy of "50% pain relief" and argued that "The glass is half full." We continue to hold this optimistic view about WIKISTIM even as we see clearly how our project can be developed and expanded to become ever more valuable to the neurostimulation community. We urge you to join in our effort by submitting completed data sheets for your papers.

### MEMBERSHIP

The number of our subscribers from at least 34 countries continues its steady growth. Thank you for helping to spread the word!



## SCROLL DOWN FOR CITATIONS ADDED FROM SEARCH ON JUNE 27, 2021

- DBS = 56 new, including 32 Free Full Text links
- DRG = 3 new
- GES = 3 new
- PNS = 32 new from 2020 and 2021, including 10 Free Full Text links
- SCS = 13 new, including 12 with Free Full Text links
- SNS = 2 new, both with Free Full Text links

## Deep Brain Stimulation (now 6306 citations)

1. Abel M, Pfister R, Hussein I, Alsalloum F, Onyinzo C, Kappl S, Zech M, Demmel W, Staudt M, Kudernatsch M, Berweck S. **Deep brain stimulation in KMT2B-related dystonia: case report and review of the literature with special emphasis on dysarthria and speech.** Front Neurol 2021 12:662910 [PubMed Free Full Text](#)
2. Abreu V, Vaz R, Chamadoira C, Rebelo V, Reis C, Costa F, Martins J, Gillies MJ, Aziz TZ, Pereira EAC. **Thalamic deep brain stimulation for post-traumatic neuropathic limb pain: efficacy at five years' follow-up and effective volume of activated brain tissue.** Neurochirurgie 2021 epub [PubMed](#)
3. Arumugham SS, Srinivas D, Narayanaswamy JC, Jaisoorya TS, Kashyap H, Domenech P, Palfi S, Mallet L, Venkatasubramanian G, Reddy YJ. **Identification of biomarkers that predict response to subthalamic nucleus deep brain stimulation in resistant obsessive-compulsive disorder: protocol for an open-label follow-up study.** BMJ Open 2021 11(6):e047492 [PubMed Free Full Text](#)
4. Asahi T, Ikeda K, Yamamoto J, Yamamoto N, Sato S, Tsubono H, Muro Y. **Foreign body granuloma around implantable pulse generator for deep brain stimulation: two case reports.** Parkinsonism Relat Disord 2021 88:60-61 [PubMed](#)
5. Bove F, Mulas D, Cavallieri F, Castrioto A, Chabardès S, Meoni S, Schmitt E, Bichon A, Di Stasio E, Kistner A, Pélissier P, Chevrier E, Seigneuret E, Krack P, Fraix V, Moro E. **Long-term outcomes (15 years) after subthalamic nucleus deep brain stimulation in patients with Parkinson disease.** Neurology 2021 epub [PubMed](#)
6. Brooks A, Hoyt AT. **Single-stage deep brain stimulator placement for movement disorders: a case series.** Brain Sci 2021 11(5):592 [PubMedFree Full Text](#)
7. Cappon D, Ryterska A, Akram H, Lagrata S, Cheema S, Hyam J, Zrinzo L, Matharu M, Jahanshahi M. **The sensitivity to change of the cluster headache quality of life scale assessed before and after deep brain stimulation of the ventral tegmental area.** J Headache Pain 2021 22(1):52 [PubMed Free Full Text](#)
8. Chandran AS, Thani NB, Bangash OK, Lind CRP. **The magnetic resonance imaging (MRI)-directed implantable guide tube technique: accuracy and applications in deep brain stimulation.** World Neurosurg 2021 epub [PubMed](#)
9. Chang SJ, Cajigas I, Guest JD, Noga BR, Widerström-Noga E, Haq I, Fisher L, Luca CC, Jagid JR. **MR tractography-based targeting and physiological identification of the cuneiform nucleus for directional DBS in a Parkinson's disease patient with levodopa-resistant freezing of gait.** Front Hum Neurosci 2021 15:676755 [PubMed Free Full Text](#)

10. Chang SJ, Cajigas I, Guest JD, Noga BR, Widerström-Noga E, Haq I, Fisher L, Luca CC, Jagid JR. **Deep brain stimulation of the cuneiform nucleus for levodopa-resistant freezing of gait in Parkinson's disease: study protocol for a prospective, pilot trial.** *Pilot Feasibility Stud* 2021 7(1):117 [PubMed](#) [Free Full Text](#)
11. Chen W, Fan H, Lu G. **The efficacy and predictors of using GPi-DBS to treat early-onset dystonia: an individual patient analysis.** *Neural Plast* 2021 2021:9924639 [PubMed](#) [Free Full Text](#)
12. Coenen VA. **Commentary: posteromedial hypothalamic deep brain stimulation for refractory aggressiveness in a patient with Weaver syndrome: clinical, technical report and operative video.** *Oper Neurosurg (Hagerstown)* 2021 opab165 [PubMed](#)
13. De Pretto M, Mouthon M, Debove I, Pollo C, Schüpbach M, Spierer L, Accolla EA. **Proactive inhibition is not modified by deep brain stimulation for Parkinson's disease: an electrical neuroimaging study.** *Hum Brain Mapp* 2021 epub [PubMed](#) [Free Full Text](#)
14. Derksen M, Rhemrev V, van der Veer M, Jolink L, Zuidinga B, Mulder T, Reneman L, Nederveen A, Feenstra M, Willuhn I, Denys D. **Animal studies in clinical MRI scanners: a custom setup for combined fMRI and deep-brain stimulation in awake rats.** *J Neurosci Methods* 2021 360:109240 [PubMed](#) [Free Full Text](#)
15. Domino JS, Lundy P, Kaufman CB. **Fulminant non-infectious peri-electrode edema after deep brain stimulation system implantation in a pediatric patient.** *Childs Nerv Syst* 2021 epub [PubMed](#)
16. Dong X, Ye W, Tang Y, Wang J, Zhong L, Xiong J, Liu H, Lu G, Feng Z. **Wakefulness-promoting effects of lateral hypothalamic area deep brain stimulation in traumatic brain injury-induced comatose rats: upregulation of  $\alpha 1$ -adrenoceptor subtypes and downregulation of gamma-aminobutyric acid  $\beta$  receptor expression via the orexins pathway.** *World Neurosurg* 2021 epub [PubMed](#)
17. Dulski J, Wąż P, Konkel A, Grabowski K, Libionka W, Schinwelski M, Sitek EJ, Sławek J. **The impact of subthalamic deep brain stimulation on restless legs syndrome in Parkinson's disease.** *Neuromodulation* 2021 epub [PubMed](#) [Full Text](#)
18. Fauser M, Ricken M, Markert F, Weis N, Schmitt O, Gimsa J, Winter C, Badstübner-Meeske K, Storch A. **Subthalamic nucleus deep brain stimulation induces sustained neurorestoration in the mesolimbic dopaminergic system in a Parkinson's disease model.** *Neurobiol Dis* 2021 156:105404 [PubMed](#) [Free Full Text](#)
19. Fernández-Rodríguez B, Dupouy J, Harroch E, Fabre-Delcros MH, Barthélémy C, Loubière P, Barange K, Brefel-Courbon C, Rascol O, Ory-Magne F. **Body mass index variations in patients with Parkinson's disease treated with levodopa-carbidopa intestinal gel infusion: a case control study versus standard of care and subthalamic nucleus deep brain stimulation.** *Rev Neurol (Paris)* 2021 epub [PubMed](#)
20. Gelpi E, Haberler C, Micko A, Polt A, Amon A, Rössler K, Alesch F. **Focal subthalamic atrophy after long-term deep brain stimulation in Parkinson's disease.** *Mov Disord* 2021 epub [PubMed](#) [Free Full Text](#)
21. Geraedts VJ, Koch M, Kuiper R, Kefalas M, Bäck THW, van Hilten JJ, Wang H, Middelkoop HAM, van der Gaag NA, Contarino MF, Tannemaat MR. **Preoperative electroencephalography-based**

- machine learning predicts cognitive deterioration after subthalamic deep brain stimulation.** *Mov Disord* 2021 epub [PubMed](#) [Free Full Text](#)
22. Gimeno H, Polatajko HJ, Cornelius V, Lin JP, Brown RG. **Rehabilitation in childhood-onset hyperkinetic movement disorders including dystonia: treatment change in outcomes across the ICF and feasibility of outcomes for full trial evaluation.** *Eur J Paediatr Neurol* 2021 epub [PubMed](#)
23. Gross RE, Fisher RS, Sperling MR, Giftakis JE, Stypulkowski PH. **Analysis of deep brain stimulation lead targeting in the stimulation of anterior nucleus of the thalamus for epilepsy clinical trial.** *Neurosurgery* 2021 nyab186 [PubMed](#) [Free Full Text](#)
24. Jiang N, Ling YT, Yang C, Liu Y, Xian WB, Zhang LN, Guo QQ, Jin XY, Wu B, Zhang CM, Chen L, Zhang ZG, Liu JL. **Optimized propofol anesthesia increases power of subthalamic neuronal activity in patients with Parkinson's disease undergoing deep brain stimulation.** *Neurol Ther* 2021 epub [PubMed](#) [Free Full Text](#)
25. Johansson J, Zsigmond P. **Comparison between patient-specific deep brain stimulation simulations and commercial system SureTune3.** *Biomed Phys Eng Express* 2021 epub [PubMed](#)
26. Jost ST, Visser-Vandewalle V, Rizos A, Loehrer PA, Silverdale M, Evans J, Samuel M, Petry-Schmelzer JN, Sauerbier A, Gronostay A, Barbe MT, Fink GR, Ashkan K, Antonini A, Martinez-Martin P, Chaudhuri KR, Timmermann L, Dafsari HS; EUROPAR and the International Parkinson and Movement Disorders Society Non-Motor Parkinson's Disease Study Group. **Non-motor predictors of 36-month quality of life after subthalamic stimulation in Parkinson disease.** *NPJ Parkinsons Dis* 2021 7(1):48 [PubMed](#) [Free Full Text](#)
27. Kawaguchi M, Miyagi Y, Kishimoto J, Samura K, Tokunaga Y, Watari M, Eguchi H, Ueda S, Iihara K. **Development of quality of life questionnaire for patients with Parkinson's disease undergoing STN-DBS.** *Neurol Med Chir (Tokyo)* 2021 epub [PubMed](#) [Free Full Text](#)
28. Koyama H, Mure H, Morigaki R, Miyamoto R, Miyake K, Matsuda T, Fujita K, Izumi Y, Kaji R, Goto S, Takagi Y. **Long-term follow-up of 12 patients treated with bilateral pallidal stimulation for tardive dystonia.** *Life (Basel)* 2021 11(6):477 [PubMed](#) [Free Full Text](#)
29. Li H, Wu Y, Pan Y, Huang P, Wang T, Zhang C, Li D, Wu Y, Sun B. **Sustained relief after cessation of subthalamic stimulation for idiopathic dystonia: a 14-year observation.** *Brain Stimul* 2021 14(4):938-940 [PubMed](#) [Free Full Text](#)
30. Li N, Hollunder B, Baldermann JC, Kibleur A, Treu S, Akram H, Al-Fatly B, Strange BA, Barcia JA, Zrinzo L, Joyce EM, Chabardes S, Visser-Vandewalle V, Polosan M, Kuhn J, Kühn AA, Horn A. **A unified functional network target for deep brain stimulation in obsessive-compulsive disorder.** *Biol Psychiatry* 2021 epub [PubMed](#)
31. Lin W, Wang D, Yang L, Zhu J, Ge J, Zuo C, Wang Y. **Corrigendum to 'Does the personality of patients with parkinson's disease affect the decision to perform deep brain stimulation surgery? A cross-sectional study in a Chinese cohort.'** *Behav Neurol* 2021 2021:9781803. Erratum for: *Behav Neurol* 2021 2021:6639255 [PubMed](#) [Free Full Text](#)
32. Lubomski M, Xu X, Holmes AJ, Yang JYH, Sue CM, Davis RL. **The impact of device-assisted therapies on the gut microbiome in Parkinson's disease.** *J Neurol* 2021 epub [PubMed](#)
33. Mahoney JJ, Haut MW, Hodder SL, Zheng W, Lander LR, Berry JH, Farmer DL, Marton JL, Ranjan M, Brandmeir NJ, Finomore VS, Hensley JL, Aklin WM, Wang GJ, Tomasi D, Shokri-Kojori E, Rezai AR. **Deep brain stimulation of the nucleus accumbens/ventral capsule for severe and**

**intractable opioid and benzodiazepine use disorder.** Exp Clin Psychopharmacol 2021 29(2):210-215 [PubMed](#)

34. Martin T, Gilmore G, Haegelen C, Jannin P, Baxter JSH. **Adapting the listening time for micro-electrode recordings in deep brain stimulation interventions.** Int J Comput Assist Radiol Surg 2021 epub [PubMed](#)
35. Middlebrooks EH, Okromelidze L, Lin C, Jain A, Westerhold E, Ritaccio A, Quiñones-Hinojosa A, Gupta V, Grewal SS. **Edge-enhancing gradient echo with multi-image co-registration and averaging (EDGE-MICRA) for targeting thalamic centromedian and parafascicular nuclei.**Neuroradiol J 2021 epub [PubMed](#)
36. Moser M, Koch P, Shah HP, Docef A, Holloway KL. **The poised cannula technique reduces the stereotactic error of the fiducial-less frameless DBS procedure.** Stereotact Funct Neurosurg 2021 epub 1-9 [PubMed](#)
37. Munoz MJ, Goelz LC, Pal GD, Karl JA, Verhagen Metman L, Sani S, Rosenow JM, Ciolino JD, Kurani AS, Corcos DM, David FJ. **Increased subthalamic nucleus deep brain stimulation amplitude impairs inhibitory control of eye movements in Parkinson's disease.**Neuromodulation 2021 epub [PubMed](#) [Full Text](#)
38. Oldani L, Benatti B, Macellaro M, Porta M, Servello D, Zekaj E, Dell'Osso B. **A case of treatment-resistant bipolar depression and comorbid OCD treated with deep brain stimulation of the medial forebrain bundle: 5 years follow-up results.** J Clin Neurosci 2021 89:103-105 [PubMed](#)
39. Prenassi M, Arlotti M, Borellini L, Bocci T, Cogiamanian F, Locatelli M, Rampini P, Barbieri S, Priori A, Marceglia S. **The relationship between electrical energy delivered by deep brain stimulation and levodopa-induced dyskinesias in Parkinson's disease: a retrospective preliminary analysis.** Front Neurol 2021 12:643841 [PubMed](#) [Free Full Text](#)
40. Qiu X, Wang Y, Lin Z, Wu Y, Xu W, Wu Y, Sun B, Ashkan K, Zhang C, Li D. **Fixed-life or rechargeable batteries for deep brain stimulation: preference and satisfaction among patients with hyperkinetic movement disorders.** Front Neurol 2021 12:662383 [PubMed](#) [Free Full Text](#)
41. Rocha MSG, de Freitas JL, Costa CDM, de Oliveira MO, Terzian PR, Queiroz JWM, Ferraz JB, Tatsch JFS, Soriano DC, Hamani C, Godinho F. **Fields of Forel brain stimulation improves levodopa-unresponsive gait and balance disorders in Parkinson's disease.** Neurosurgery 2021 nyab195 [PubMed](#)
42. Roh H, Kim JH, Koh SB, Kim JH. **Correlating beta oscillations from intraoperative microelectrode and postoperative implanted electrode in patients undergoing subthalamic nucleus deep brain stimulation for Parkinson's disease; a feasibility study.** World Neurosurg 2021 epub [PubMed](#)
43. Sarica C, Yamamoto K, Loh A, Elias GJB, Boutet A, Madhavan R, Germann J, Zemmar A, Gwun D, Tasserie J, Andrade DM, Hodaie M, Kalia SK, Wennberg RA, Lozano AM. **Blood oxygen level-dependent (BOLD) response patterns with thalamic deep brain stimulation in patients with medically refractory epilepsy.** Epilepsy Behav 2021 122:108153 [PubMed](#)
44. Schnitzler A, Mir P, Brodsky MA, Verhagen L, Groppa S, Alvarez R, Evans A, Blazquez M, Nagel S, Pilitsis JG, Pötter-Nerger M, Tse W, Almeida L, Tomycz N, Jimenez-Shahed J, Libionka W, Carrillo F, Hartmann CJ, Groiss SJ, Glaser M, Defresne F, Karst E, Cheeran B, Vesper J;

- PROGRESS Study Investigators. **Directional deep brain stimulation for Parkinson's disease: results of an international crossover study with randomized, double-blind primary endpoint.** Neuromodulation 2021 epub [PubMed Free Full Text](#)
45. Seger A, Gulberti A, Vettorazzi E, Braa H, Buhmann C, Gerloff C, Hamel W, Moll CKE, Pötter-Nerger M. **Short pulse and conventional deep brain stimulation equally improve the parkinsonian gait disorder.** J Parkinsons Dis 2021 epub [PubMed](#)
  46. Sidtis JJ, Sidtis DVL, Dhawan V, Tagliati M, Eidelberg D. **Stimulation of the subthalamic nucleus changes cortical-subcortical blood flow patterns during speech: a positron emission tomography study.** Front Neurol 2021 epub [PubMed Free Full Text](#)
  47. Targum SD, Fosdick L, Drake KE, Rosenberg PB, Burke AD, Wolk DA, Foote KD, Asaad WF, Sabbagh M, Smith GS, Lozano AM, Lyketsos CG. **Effect of age on clinical trial outcome in participants with probable Alzheimer's disease.** J Alzheimers Dis 2021 epub [PubMed Free Full Text](#)
  48. Tiedt HO, Ehlen F, Wyrobnik M, Klostermann F. **Thalamic but not subthalamic neuromodulation simplifies word use in spontaneous language.** Front Hum Neurosci 2021 15:656188 [PubMed Free Full Text](#)
  49. Ward M, Ahmed M, Markosian C, Ezike JZ, Agrawal R, Randhawa K, Liang Z, Abraham M, Paskhover B, Mammis A. **Complications associated with deep brain stimulation for Parkinson's disease: a MAUDE study.** Br J Neurosurg 2021 epub 1-4 [PubMed](#)
  50. Wenzel GR, Roediger J, Brücke C, Marcelino ALA, Gülke E, Pötter-Nerger M, Scholtes H, Wynants K, Juárez Paz LM, Kühn AA. **CLOVER-DBS: algorithm-guided deep brain stimulation-programming based on external sensor feedback evaluated in a prospective, randomized, crossover, double-blind, two-center study.** J Parkinsons Dis 2021 epub [PubMed](#)
  51. Xu SS, Malpas CB, Bulluss KJ, McDermott HJ, Kalincik T, Thevathasan W. **Lesser-known aspects of deep brain stimulation for Parkinson's disease: programming sessions, hardware surgeries, residential care admissions, and deaths.** Neuromodulation 2021 epub [PubMed Full Text](#)
  52. Yavasoglu NG, Comoglu SS. **The effect of subthalamic deep brain stimulation on autonomic dysfunction in Parkinson's disease: clinical and electrophysiological evaluation.** Neurol Res 2021 epub 1-6 [PubMed](#)
  53. Yin Z, Bai Y, Zou L, Zhang X, Wang H, Gao D, Qin G, Ma R, Zhang K, Meng F, Jiang Y, Yang A, Zhang J. **Balance response to levodopa predicts balance improvement after bilateral subthalamic nucleus deep brain stimulation in Parkinson's disease.** NPJ Parkinsons Dis 2021 7(1):47 [PubMed Free Full Text](#)
  54. Zeng K, Drummond NM, Ghahremani A, Saha U, Kalia SK, Hodaie M, Lozano AM, Aron AR, Chen R. **Fronto-subthalamic phase synchronization and cross-frequency coupling during conflict processing.** Neuroimage 2021 238:118205 [PubMed Free Full Text](#)
  55. Zhang W, Liu W, Patel B, Chen Y, Wang K, Yang A, Meng F, Wagle Shukla A, Cen S, Yu J, Ramirez-Zamora A, Zhang J. **Case report: deep brain stimulation of the nucleus basalis of meynert for advanced Alzheimer's disease.** Front Hum Neurosci 2021 epub [PubMed Free Full Text](#)

56. Zhang Y, Wang Z, Ju J, Liao J, Zhou Q. **Elevated activity in the dorsal dentate gyrus reduces expression of fear memory after fear extinction training.** J Psychiatry Neurosci 2021 46(3):E390-E401 [PubMed Free Full Text](#)

#### **Dorsal Root Ganglion Stimulation (now 197 citations, with 9 completed WIKISTIM abstracts)**

1. Bretherton B, de Ridder D, Crowther T, Black S, Whelan A, Baranidharan G. **Men and women respond equally well to spinal cord and dorsal root ganglion stimulation.** Neuromodulation 2021 epub [PubMed Full Text](#)
2. Chapman KB, Mogilner AY, Yang A, Yadav A, Patel KV, Lubenow T, van Helmond N, Deer T, Kallewaard JW. **Lead migration and fracture rate in dorsal root ganglion stimulation using anchoring and non-anchoring techniques: a multicenter pooled data analysis.** Pain Pract 2021 epub [PubMed](#)
3. Yu G, Segel I, Tran H, Park HJ, Ross E, Hogan QH, Pan B. **Analgesic effects of tonic and burst dorsal root ganglion stimulation in rats with painful tibial nerve injury.** Neuromodulation 2021 epub [PubMed Full Text](#)

#### **Gastric Electrical Stimulation (now 510 citations)**

1. Debelle A, de Rooster H, Bianchini E, Lonys L, Huberland F, Vanhoestenbergh A, Lambert P, Acuña V, Smets H, Giannotta F, Delchambre A, Sandersen C, Bolen G, Egyptien S, Deleuze S, Devière J, Nonclercq A. **Optimization and assessment of a novel gastric electrode anchoring system designed to be implanted by minimally invasive surgery.** Med Eng Phys 2021 92:93-101 [PubMed](#)
2. Orsagh-Yentis DK, Ryan K, Hurwitz N, Diefenbach KA, Teich S, Mousa H, Bali N, Vaz K, Yacob D, Di Lorenzo C, Lu PL. **Gastric electrical stimulation improves symptoms and need for supplemental nutrition in children with severe nausea and vomiting: a ten-year experience.** Neurogastroenterol Motil 2021 e14199 [PubMed](#)
3. Ramai D, DeLuca M, Enofe I, Mozell D, Facciorusso A. **Device failures associated with gastric pacemakers: a MAUDE database analysis.** Dig Liver Dis 2021 epub [PubMed](#)

#### **Peripheral Nerve Stimulation (now 560 citations, with 6 completed WIKISTIM abstracts)**

1. Agrawal NA, Gfrerer L, Heng M, Valerio IL, Eberlin KR. **The use of peripheral nerve stimulation in conjunction with TMR for neuropathic pain.** Plast Reconstr Surg Glob Open 2021 9(6):e3655 [PubMed Free Full Text](#)
2. Booth J, Aucott L, Cotton S, Davis B, Fenocchi L, Goodman C, Hagen S, Harari D, Lawrence M, Lowndes A, Macaulay L, MacLennan G, Mason H, McClurg D, Norrie J, Norton C, O'Dolan C, Skelton D, Surr C, Treweek S. **Tibial nerve stimulation compared with sham to reduce incontinence in care home residents: ELECTRIC RCT.** Health Technol Assess 2021 25(41):1-110 [PubMed Free Full Text](#)
3. Brandon C, Oh C, Brucker BM, Rosenblum N, Ferrante KL, Smilen SW, Nitti VW, Pape DM. **Persistence in percutaneous tibial nerve stimulation treatment for overactive bladder syndrome is best predicted by patient global impression of improvement rather than symptom-specific improvement.** Urology 2021 148:93-99 [PubMed](#)

4. Caiado Vencio R, Raffa PEAZ, Ponce ACC, Malamud BP, Pacheco CC, Franceschini PR, Medeiros RTR, de Aguiar PHP. **An unusual case of lead migration in occipital nerve stimulation: a case report and literature review.** Surg Neurol Int 2021 12:189 [PubMed](#) [Free Full Text](#)
5. Cuicchi D, Di Fabio F, Guido A, Llimpe FLR, Morganti AG, Ardizzoni A, Coscia M, Poggioli G. **Randomized pilot trial of percutaneous posterior tibial nerve stimulation versus medical therapy for the treatment of low anterior resection syndrome: one-year follow-up.** Dis Colon Rectum 2020 63(12):1602-1609 [PubMed](#)
6. Dzhafarov VM, Slavin KV. **Simultaneous sphenopalatine and occipital nerve stimulation in treatment of chronic refractory cluster headache: a case report.** Neuromodulation 2021 epub [PubMed](#) [Full Text](#)
7. Fuentes-Angulo I, Jiménez Vílchez AJ, Rodríguez Torronteras A, Olmo Carmona MV. **Percutaneous tibial nerve stimulation in urge urinary incontinence: a prospective study. Spanish.** Rehabilitacion (Madr) 2020 54(4):236-243 [PubMed](#)
8. Gordon T, Merchant M, Ramm O, Patel M. **Factors associated with long-term use of percutaneous tibial nerve stimulation for management of overactive bladder syndrome.** Female Pelvic Med Reconstr Surg 2021 27(7):444-449 [PubMed](#)
9. Hasoon J, Chitneni A, Urits I, Viswanath O, Kaye AD. **Peripheral stimulation of the saphenous and superior lateral genicular nerves for chronic knee pain.** Cureus 2021 13(4):e14753 [PubMed](#) [Free Full Text](#)
10. Jiang J, Patil D, Traore EJ, Hammett J, Filson CP. **Contemporary patterns of third-line treatments for privately insured individuals with overactive bladder in the United States.** Urology 2020 142:87-93 [PubMed](#)
11. Jung CE, Menefee SA, Diwadkar GB. **Percutaneous tibial nerve stimulation maintenance therapy for overactive bladder in women: long-term success rates and adherence.** Int Urogynecol J 2021 32(3):617-625 [PubMed](#)
12. Kirby AC, Park S, Cook SB, Odem-Davis K, Gore JL, Wolff EM. **Practice patterns for women with overactive bladder syndrome: time between medications and third-line treatments.** Female Pelvic Med Reconstr Surg 2020 26(7):431-436 [PubMed](#)
13. Kraus SR, Shiozawa A, Szabo SM, Qian C, Rogula B, Hairston J. **Treatment patterns and costs among patients with OAB treated with combination oral therapy, sacral nerve stimulation, percutaneous tibial nerve stimulation, or onabotulinumtoxinA in the United States.** Neurourol Urodyn 2020 39(8):2206-2222 [PubMed](#) [Free Full Text](#)
14. Langford B, Mauck WD. **Advancement in neuromodulation technology with the innovation of design-specific peripheral nerve stimulators: sural nerve stimulation for radiculopathy.** Pain Med 2020 21(6):1297-1300 [PubMed](#)
15. Lee J, Park E, Kang W, Kim Y, Lee KS, Park SM. **An efficient noninvasive neuromodulation modality for overactive bladder using time interfering current method.** IEEE Trans Biomed Eng 2021 68(1):214-224 [PubMed](#)
16. Leo CA, Thomas GP, Hodgkinson JD, Leeuwenburgh M, Bradshaw E, Warusavitarne J, Murphy J, Vaizey CJ. **Randomized pilot study: anal inserts versus percutaneous tibial nerve stimulation in patients with fecal incontinence.** Dis Colon Rectum 2021 64(4):466-474 [PubMed](#)



17. Lo CW, Wu MY, Yang SS, Jaw FS, Chang SJ. **Comparing the efficacy of onabotulinumtoxinA, sacral neuromodulation, and peripheral tibial nerve stimulation as third line treatment for the management of overactive bladder symptoms in adults: systematic review and network meta-analysis.** *Toxins (Basel)* 2020 12(2):128 [PubMed](#) [Free Full Text](#)
18. Manso B, Alias D, Franco R, Levano-Linares C, Laiz B, Garcia-Olmo D, Duran M, Ruiz-Tovar J. **Percutaneous electrical stimulation of the posterior tibial nerve for the treatment of fecal incontinence: manometric results after 6 months of treatment.** *Int J Colorectal Dis* 2020 35(11):2049-2054 [PubMed](#)
19. Mazor Y, Prott GM, Sequeira C, Jones M, Ejova A, Kellow JE, Schnitzler M, Malcolm A. **A novel combined anorectal biofeedback and percutaneous tibial nerve stimulation protocol for treating fecal incontinence.** *Therap Adv Gastroenterol* 2020 epub [PubMed](#) [Free Full Text](#)
20. Park E, Lee JW, Kim T, Kang M, Cho BH, Lee J, Park SM, Lee KS. **The long-lasting post-stimulation inhibitory effects of bladder activity induced by posterior tibial nerve stimulation in unanesthetized rats.** *Sci Rep* 2020 10(1):19897 [PubMed](#) [Free Full Text](#)
21. Ramírez-García I, Kauffmann S, Blanco-Ratto L, Carralero-Martínez A, Sánchez E. **Patient-reported outcomes in the setting of a randomized control trial on the efficacy of transcutaneous stimulation of the posterior tibial nerve compared to percutaneous stimulation in idiopathic overactive bladder syndrome.** *Neurourol Urodyn* 2021 40(1):295-302 [PubMed](#) [Free Full Text](#)
22. Rodríguez Carrillo R, Ruiz Carmona MD, Alós Company R, Frangi Caregnato A, Alarcón Iranzo M, Solana Bueno A, Lozoya Trujillo R, García-Granero Ximénez E. **Importance of some technical aspects of the procedure of percutaneous posterior tibial nerve stimulation in patients with fecal incontinence.** *Cir Esp (Engl Ed)* 2020 epub [PubMed](#)
23. Roemer PB, Wade T, Alejski A, McKenzie CA, Rutt BK. **Electric field calculation and peripheral nerve stimulation prediction for head and body gradient coils.** *Magn Reson Med* 2021 epub [PubMed](#)
24. Sacco R, Braga A, Disanto G, Digesu GA, Maino P, Koetsier E, Caccia G, Serati M, Renard J, Gobbi C, Zecca C. **Effectiveness of percutaneous posterior tibial nerve stimulation for the management of bowel dysfunction in multiple sclerosis patients.** *Mult Scler* 2020 epub [PubMed](#)
25. Shon A, Brakel K, Hook M, Park H. **Closed-loop plantar cutaneous augmentation by electrical nerve stimulation could increase ankle plantarflexion at treadmill walking.** *IEEE Trans Biomed Eng* 2021 epub [PubMed](#)
26. Sondekoppam RV, Ip V, Tsui BCH. **Feasibility of combining nerve stimulation and local anesthetic infusion to treat acute postamputation pain: a case report of a hybrid technique.** *A A Pract* 2021 15(6):e01487 [PubMed](#)
27. Sönmez R, Yıldız N, Alkan H. **Efficacy of percutaneous and transcutaneous tibial nerve stimulation in women with idiopathic overactive bladder: a prospective randomised controlled trial.** *Ann Phys Rehabil Med* 2021 epub 101486 [PubMed](#)
28. Sudol NT, Guaderrama N, Adams-Piper E, Whitcomb E, Lane F. **Percutaneous tibial nerve stimulation for the treatment of interstitial cystitis/bladder pain syndrome: a pilot study.** *Int Urogynecol J* 2020 epub [PubMed](#)

29. 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 142:81-86 [PubMed](#)
30. Tanaka H, Nakamura J, Siozaki T, Ueta K, Morioka S, Shomoto K, Okada Y. **Posture influences on vestibulospinal tract excitability.** Exp Brain Res 2021 239(3):997-1007 [PubMed](#)
31. Wan X, Liang Y, Li X, Liao L. **Inhibitory effects of a minimally invasive implanted tibial nerve stimulation device on non-nociceptive bladder reflexes in cats.** Int Urol Nephrol 2021 53(3):431-438 [PubMed](#)
32. Wilbrink LA, de Coo IF, Doesborg PGG, Mulleners WM, Teernstra OPM, Bartels EC, Burger K, Wille F, van Dongen RTM, Kurt E, Spincemaille GH, Haan J, van Zwet EW, Huygen FJPM, Ferrari MD; ICON study group. **Safety and efficacy of occipital nerve stimulation for attack prevention in medically intractable chronic cluster headache (ICON): a randomised, double-blind, multicentre, phase 3, electrical dose-controlled trial.** Lancet Neurol 2021 20(7):515-525 [PubMed](#)

### Spinal Cord Stimulation (now 2717 citations, with 133 completed or partially completed WIKISTIM

1. Al-Kaisy A, Palmisani S, Carganillo R, Wesley S, Pang D, Rotte A, Santos A, Lambro G. **Safety and efficacy of 10 kHz spinal cord stimulation for the treatment of refractory chronic migraine: a prospective long-term open-label study.** Neuromodulation 2021 epub [PubMed](#) [Free Full Text](#)
2. Breel J, Wille F, Wensing AGCL, Kallewaard JW, Pelleboer H, Zuidema X, Bürger K, de Graaf S, Hollmann MW. **A comparison of 1000 Hz to 30 Hz spinal cord stimulation strategies in patients with unilateral neuropathic leg pain due to failed back surgery syndrome: a multicenter, randomized, double-blinded, crossover clinical study (HALO).** Pain Ther 2021 epub [PubMed](#) [Free Full Text](#)
3. Bretherton B, de Ridder D, Crowther T, Black S, Whelan A, Baranidharan G. **Men and women respond equally well to spinal cord and dorsal root ganglion stimulation.** Neuromodulation 2021 epub [PubMed](#) [Full Text](#)
4. Giglio M, Preziosa A, Rekatsina M, Viswanath O, Urits I, Varrassi G, Paladini A, Puntillo F. **Successful spinal cord stimulation for necrotizing Raynaud's phenomenon in Covid-19 affected patient: the nightmare comes back.** Cureus 2021 13(4):e14569 [PubMed](#) [Free Full Text](#)
5. Hagedorn JM, Parmele JB, Wolff JS, Bendel MA, D'Souza RS. **The prevalence of elevated impedances and magnetic resonance imaging ineligibility following implantation of 10 kHz spinal cord stimulation devices: a retrospective review.** Neuromodulation 2021 epub [PubMed](#) [Full Text](#)
6. Lee KY, Lee D, Kagan ZB, Wang D, Bradley K. **Differential modulation of dorsal horn neurons by various spinal cord stimulation strategies.** Biomedicines 2021 9(5):568 [PubMed](#) [Free Full Text](#)
7. Pulverenti TS, Zaaya M, Grabowski M, Grabowski E, Islam MA, Li J, Murray LM, Knikou M. **Neurophysiological changes after paired brain and spinal cord stimulation coupled with locomotor training in human spinal cord injury.** Front Neurol 2021 12:627975 [PubMed](#) [Free Full Text](#)

8. Saber M, Schwabe D, Park HJ, Tessmer J, Khan Z, Ding Y, Robinson M, Hogan QH, Pawela CP. **Tonic, burst, and burst cycle spinal cord stimulation lead to differential brain activation patterns as detected by functional magnetic resonance imaging.** *Neuromodulation* 2021 epub [PubMed Full Text](#)
9. Sabourin S, Tram J, Sheldon BL, Pilitsis JG. **Defining minimal clinically important differences in pain and disability outcomes of patients with chronic pain treated with spinal cord stimulation.** *J Neurosurg Spine* 2021 epub 1-8 [PubMed](#)
10. Woodington BJ, Curto VF, Yu YL, Martínez-Domínguez H, Coles L, Malliaras GG, Proctor CM, Barone DG. **Electronics with shape actuation for minimally invasive spinal cord stimulation.** *Sci Adv* 2021 7(26):eabg7833 [PubMed Free Full Text](#)
11. Woodroffe RW, Perez EA, Seaman SC, Park BJ, Nockels RP, Howard MA 3rd, Wilson S. **Evaluation of sagittal spinopelvic balance in spinal cord stimulator patients.** *Neuromodulation* 2021 epub [PubMed Full Text](#)
12. Yamada C, Maeda A, Matsushita K, Nakayama S, Shirozu K, Yamaura K. **1-kHz high-frequency spinal cord stimulation alleviates chronic refractory pain after spinal cord injury: a case report.** *JA Clin Rep* 2021 7(1):46 [PubMed Free Full Text](#)

#### Sacral Nerve Stimulation (now 1088 citations)

1. Seifarth C, Slavova N, Degro C, Lehmann KS, Kreis ME, Weixler B. **Sacral nerve stimulation in patients with ileal pouch-anal anastomosis.** *Int J Colorectal Dis* 2021 epub [PubMed Free Full Text](#)
2. Zhang Y, Meng L, Zhang P, Tian X, Chen G, Li Y, Zhang Y, Xu Z, Wei Z, Zhang W, Ma L, Shi B, Liao L, Wang J. **Intermediate-term results of a prospective, multicenter study on remote programming sacral neuromodulation for refractory overactive bladder.** *Transl Androl Urol* 2021 10(5):1966-1975 [PubMed Free Full Text](#)

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