



# Clinical Policy: Peripheral and Percutaneous Electrical Nerve Stimulation

Reference Number: WA.CP.MP.117

Last Review Date: 10/22

Effective Date: 11/01/22

[Coding Implications](#)

[Revision Log](#)

See [Important Reminder](#) at the end of this policy for important regulatory and legal information.

## Description

Peripheral nerve stimulation (PNS) is intended to decrease chronic and acute pain by stimulating peripheral nerves with leads placed adjacent or parallel to the affected nerve.<sup>18</sup> PNS can be used in a trial of pain relief effectiveness, or for permanent placement. In peripheral nerve field stimulation (PNFS), leads are placed in the region in which the pain is felt, stimulating smaller peripheral nerves and nerve endings.<sup>18</sup> PNFS is useful when one nerve does not clearly service the painful area.

Percutaneous electrical nerve stimulation uses fine needles as electrodes, which are placed in the soft tissues or muscles at dermatomal levels consistent with pain or pathology local pathology. It is similar to transcutaneous electrical nerve stimulation but bypasses the local skin resistance and delivers electrical current closer to the affected tissues.

*Note: For other types of peripheral nerve stimulation, please refer to:*

- CP.MP.40 Gastric Electrical Stimulation
- CP.MP.137 Fecal Incontinence Treatments
- CP.MP.133 Posterior Tibial Nerve Stimulation for Voiding Dysfunction
- CP.MP.12 Vagus Nerve Stimulation
- CP.MP.203 Diaphragmatic/Phrenic Nerve Stimulation

## Policy/Criteria

- I. It is the policy of Coordinated Care of Washington, Inc., and Coordinated Care Corporation, that there is insufficient evidence to support the efficacy of peripheral nerve stimulation *or* peripheral nerve field stimulation for any indication.
- II. It is the policy of Coordinated Care of Washington, Inc., and Coordinated Care Corporation, that percutaneous electrical nerve stimulation (PENS) is **medically necessary** when meeting all the following:
  - A. Diagnosis of diabetic neuropathy or neuropathic pain
  - B. Failed to adequately respond to a trial of at least three conventional treatments, unless contraindicated, and any of the following:
    1. Anticonvulsants (e.g., pregabalin)
    2. Antidepressants (e.g., amitriptyline, and duloxetine)
    3. Opioids (e.g., morphine sulphate and tramadol)
    4. Other pharmacological agents (e.g., capsaicin and isosorbide dinitrate spray)

C. Request is for up to four weeks of PENS.

### **Background**

#### *Peripheral nerve stimulation (PNS)*

Evidence supporting peripheral nerve stimulation (PNS) is limited. According to a systematic review by Xu et al., there is a lack of high-quality randomized control trials to recommend PNS for most pain management indications.<sup>19</sup> They cited wide variations in experimental design, research protocol, and heterogeneity of study population as limitations preventing a meta-analysis.<sup>19</sup> Xu et al. stated that PNS had level I and Level II evidence supporting its efficacy for migraine/chronic headache.<sup>19</sup> However, the large multicenter randomized clinical trial (RCT) included in the systematic review, conducted by Dodick et al. studying the effect of PNS for migraine headache, also noted adverse events among 70% of the study sample, with 48% of the patients with adverse events requiring hospitalization or further surgical intervention to treat the complication.<sup>20</sup> An additional systematic literature review noted moderate to strong evidence for peripheral nerves stimulation, but surveyed the literature as a whole for an array of pain indications, noting that further research could help “further refine appropriate populations and pain diagnoses.”<sup>26</sup> Hayes notes that there is insufficient evidence to evaluate the efficacy of peripheral nerve stimulation for back pain, or chronic neck pain.<sup>18</sup>

#### *Peripheral nerve field stimulation (PNFS)*

Hayes notes two available RCTs addressing PNFS for chronic low back pain, stating they were of low quality due to inability to blind patients and/or researchers, low sample sizes, and short follow-up periods.<sup>27</sup> An additional RCT evaluated subcutaneous PNFS combined with spinal cord stimulation (SCS) for refractory low back pain, concluding that PNFS significantly decreased pain compared to SCS alone.<sup>28</sup> Study limitations included industry ties amongst investigators and small sample sizes.<sup>28</sup> There were too few high-quality studies to support the safety or efficacy of PNFS for other indications.

#### *Percutaneous electrical nerve stimulation (PENS)*

The American Academy of Neurology’s 2011 guideline on treatment of painful diabetic neuropathy gives a B-grade recommendation for PENS as a treatment modality. They note one class I trial comparing PENS to sham treatment, yielding a 42% reduction in pain according to the visual analog scale.<sup>22</sup> The National Institute for Clinical Health and Care Excellence (NICE) also recommends PENS for refractory neuropathic pain, noting evidence of short-term efficacy and no significant safety concerns. NICE guidelines cite evidence from two RCTs with 64 and 50 patients, respectively, demonstrating significant reduction in pain and favorable safety profiles.<sup>25</sup>

### **Coding Implications**

This clinical policy references Current Procedural Terminology (CPT®). CPT® is a registered trademark of the American Medical Association. All CPT codes and descriptions are copyrighted 2020, American Medical Association. All rights reserved. CPT codes and CPT descriptions are from the current manuals and those included herein are not intended to be all-inclusive and are included for informational purposes only. Codes referenced in this clinical policy are for informational purposes only. Inclusion or exclusion of any codes does not guarantee coverage.

Providers should reference the most up-to-date sources of professional coding guidance prior to the submission of claims for reimbursement of covered services.

CPT® Codes	Description
0587T	Percutaneous implantation or replacement of integrated single device neurostimulation system including electrode array and receiver or pulse generator, including analysis, programming, and imagining guidance when performed, posterior tibial nerve
0588T	Revision or removal of integrated single device neurostimulation system including electrode array and receiver or pulse generator, including analysis, programming, and imagining guidance when performed, posterior tibial nerve
0589T	Electronic analysis with simple programming of implanted integrated neurostimulation system, including contact groups, amplitude, pulse width, frequency, on/off cycling, burst, dose lockout, patient-selectable parameters, responsive neurostimulation, detection algorithms, closed-loop parameters, and passive parameters, when performed by physician or other qualified health care professional, posterior tibial nerve, 1-3 parameters.
0590T	Electronic analysis with simple programming of implanted integrated neurostimulation system, including contact groups, amplitude, pulse width, frequency, on/off cycling, burst, dose lockout, patient-selectable parameters, responsive neurostimulation, detection algorithms, closed-loop parameters, and passive parameters, when performed by physician or other qualified health care professional, posterior tibial nerve, 4 or more parameters.
64555	Percutaneous implantation of neurostimulator electrode array; peripheral nerve
64575	Open implantation of neurostimulator electrode array; peripheral nerve (excludes sacral nerve)
64585	Revision or removal of peripheral neurostimulator electrode array
64590*	Insertion or replacement of peripheral or gastric neurostimulator pulse generator or receiver, direct or inductive coupling
64595*	Revision or removal of peripheral or gastric neurostimulator pulse generator or receiver
95970	Electronic analysis of implanted neurostimulator pulse generator/transmitter (e.g., contact group[s], interleaving, amplitude, pulse width, frequency [Hz], on/off cycling, burst, magnet mode, dose lockout, patient selectable parameters, responsive neurostimulation, detection algorithms, closed loop parameters, and passive parameters) by physician or other qualified health care professional; with brain, cranial nerve, spinal cord, peripheral nerve, or sacral nerve, neurostimulator pulse generator/transmitter, without programming

CPT® Codes	Description
95971	Electronic analysis of implanted neurostimulator pulse generator/transmitter (e.g., contact group[s], interleaving, amplitude, pulse width, frequency [Hz], on/off cycling, burst, magnet mode, dose lockout, patient selectable parameters, responsive neurostimulation, detection algorithms, closed loop parameters, and passive parameters) by physician or other qualified health care professional; with simple spinal cord or peripheral nerve (e.g., sacral nerve) neurostimulator pulse generator/transmitter programming by physician or other qualified health care professional
95972	Electronic analysis of implanted neurostimulator pulse generator/transmitter (e.g., contact group[s], interleaving, amplitude, pulse width, frequency [Hz], on/off cycling, burst, magnet mode, dose lockout, patient selectable parameters, responsive neurostimulation, detection algorithms, closed loop parameters, and passive parameters) by physician or other qualified health care professional; with complex spinal cord or peripheral nerve (e.g., sacral nerve) neurostimulator pulse generator/transmitter programming by physician or other qualified health care professional

\*For gastric electrical stimulation, refer to CP.MP.40 Gastric Electrical Stimulation

Reviews, Revisions, and Approvals	Date	Approval Date
Policy split from CP.MP.63 Pain Management Procedures. Added chronic lower limb ischemia indication in I. C per Cochrane review of effectiveness. I.D. Case by case indications: Added indications in I.D. per American Association of Neurological Surgeons 2008 information on SCS, and 2010 American Society of Anesthesiologists guidelines; added diabetic neuropathy indication. Added requirement for reversible ischemia documented by treadmill exercise test per inclusion criteria in study by de Jongste. Added ICD-1 codes for diabetic neuropathy.	07/16	07/16
Took out requirement for more than 1 failed back surgery or failed back surgery at more than 1 level in failed back surgery syndrome (FBSS) indication (I.A.), as this was not supported by literature. Specified that pain in FBSS should be neuropathic. Added hyperalgesia as a symptom of CRPS. Coding updated.	07/17	07/17
Took out requirement for more than 1 failed back surgery or failed back surgery at more than 1 level in failed back surgery syndrome (FBSS) indication (I.A.), as this was not supported by literature. Specified that pain in FBSS should be neuropathic. Added hyperalgesia as a symptom of CRPS. Coding updated.	07/17	07/17
References reviewed and updated.	05/18	05/18
Added Failed Neck Surgery Syndrome to indications under limited evidence criteria (I.D.1.k). Reviewed by specialist.	09/18	09/18
References reviewed and updated. Codes updated	03/19	03/19
Policy archived for TurningPoint.	09/19	09/19
Renumbered CP.MP.117 to WA.CP.MP.117. Removed references to Spinal Cord Stimulation. Renamed Peripheral and Percutaneous Electrical Nerve Stimulation	10/22	11/22

**References**

1. Abdi S. Complex regional pain syndrome in adults: Pathogenesis, clinical manifestations, and diagnosis. UpToDate. [www.uptodate.com](http://www.uptodate.com). Published July 13, 2020. Accessed January 25, 2022.
2. Abdi S. Complex regional pain syndrome in adults: Treatment, prognosis, and prevention. UpToDate. [www.uptodate.com](http://www.uptodate.com). Published January 21, 2022. Accessed January 25, 2022.
3. American Association of Neurological Surgeons. Spinal Cord Stimulation. <https://www.aans.org/en/Patients/Neurosurgical-Conditions-and-Treatments/Spinal-Cord-Stimulation>. Accessed January 25, 2022.
4. American Society of Anesthesiologists Task Force on Chronic Pain Management; American Society of Regional Anesthesia and Pain Medicine. Practice guidelines for chronic pain management: an updated report by the American Society of Anesthesiologists Task Force on Chronic Pain Management and the American Society of Regional Anesthesia and Pain Medicine. *Anesthesiology*. 2010;112(4):810-833. doi:10.1097/ALN.0b013e3181c43103
5. Cho JH, Lee JH, Song KS, et al. Treatment Outcomes for Patients with Failed Back Surgery. *Pain Physician*. 2017;20(1):E29-E43.

6. de Jongste MJ, Hautvast RW, Hillege HL, Lie KI. Efficacy of spinal cord stimulation as adjuvant therapy for intractable angina pectoris: a prospective, randomized clinical study. Working Group on Neurocardiology. *J Am Coll Cardiol*. 1994;23(7):1592-1597. doi:10.1016/0735-1097(94)90661-0
7. de Vos CC, Meier K, Zaalberg PB, et al. Spinal cord stimulation in patients with painful diabetic neuropathy: a multicentre randomized clinical trial. *Pain*. 2014;155(11):2426-2431. doi:10.1016/j.pain.2014.08.031
8. Hayes Medical Technology Directory. Electrical Spinal Cord Stimulation for the Treatment of Intractable Angina Pectoris. Hayesinc.com October 2014. Annual review September 13, 2017. Archived November 22, 2019.
9. Health technology assessment: Spinal cord stimulation for relief of neuropathic pain. Hayes. [www.hayesinc.com](http://www.hayesinc.com). Published December 21, 2018 (annual review April 26, 2021). Accessed January 25, 2022.
10. McKenzie-Brown AM, Pritzlaff SG. Spinal cord stimulation: Placement and management. UpToDate. [www.uptodate.com](http://www.uptodate.com). Published January 11, 2022. Accessed January 25, 2022.
11. Petrakis IE, Sciacca V. Does autonomic neuropathy influence spinal cord stimulation therapy success in diabetic patients with critical lower limb ischemia? *Surg Neurol*. 2000;53(2):182-189. doi:10.1016/s0090-3019(99)00182-2
12. Simmons M, Laham RJ. New therapies for angina pectoris. UpToDate. [www.uptodate.com](http://www.uptodate.com). Published September 28, 2020. Accessed January 25, 2022.
13. Slangen R, Schaper NC, Faber CG, et al. Spinal cord stimulation and pain relief in painful diabetic peripheral neuropathy: a prospective two-center randomized controlled trial. *Diabetes Care*. 2014;37(11):3016-3024. doi:10.2337/dc14-0684
14. Tsigaridas N, Naka K, Tsapogas P, Pelechas E, Damigos D. Spinal cord stimulation in refractory angina. A systematic review of randomized controlled trials. *Acta Cardiol*. 2015;70(2):233-243. doi:10.1080/ac.70.2.3073516
15. Ubbink DT, Vermeulen H. Spinal cord stimulation for non-reconstructable chronic critical leg ischaemia. *Cochrane Database Syst Rev*. 2003;(3):CD004001. doi:10.1002/14651858.CD004001
16. van Beek M, Slangen R, Schaper NC, et al. Sustained Treatment Effect of Spinal Cord Stimulation in Painful Diabetic Peripheral Neuropathy: 24-Month Follow-up of a Prospective Two-Center Randomized Controlled Trial. *Diabetes Care*. 2015;38(9):e132-e134. doi:10.2337/dc15-0740
17. Garcia K, Wray JK, Kumar S. Spinal Cord Stimulation. StatPearls. <https://www.ncbi.nlm.nih.gov/books/NBK553154/>. Published April 7, 2021. Accessed January 25, 2022.
18. Evidence analysis research brief: Peripheral nerve stimulation for treatment of chronic pain. Hayes. [www.hayesinc.com](http://www.hayesinc.com). Published September 8, 2021. Accessed January 25, 2022.
19. Xu J, Sun Z, Wu J, et al. Peripheral nerve stimulation in pain management: a systematic review. *Pain Phys*. 2021;24:E131-E152.
20. Dodick DW, Silberstein SD, Reed KL, et al. Safety and efficacy of peripheral nerve stimulation of the occipital nerves for the management of chronic migraine: Long-term results from a randomized, multi-center, double-blinded, controlled study. *Cephalalgia*. 2015;35(4):344-358. doi:10.1177/0333102414543331

21. Chou, R. Subacute and chronic low back pain: Nonpharmacologic and pharmacologic treatment. UpToDate. [www.uptodate.com](http://www.uptodate.com). Updated November 11, 2021. Accessed January 13, 2022.
22. Bril V, England J, Franklin GM, et al. Evidence-based guideline: Treatment of painful diabetic neuropathy: report of the American Academy of Neurology, the American Association of Neuromuscular and Electrodiagnostic Medicine, and the American Academy of Physical Medicine and Rehabilitation [published correction appears in *Neurology*. 2011 Aug 9;77(6):603. Dosage error in article text]. *Neurology*. 2011;76(20):1758-1765. doi:10.1212/WNL.0b013e3182166ebe
23. Feldman E. Management of diabetic neuropathy. UpToDate. [www.uptodate.com](http://www.uptodate.com). Updated January 11, 2022. Accessed January 13, 2022.
24. Warner NS, Schaefer KK, Eldrige JS, et al. Peripheral Nerve Stimulation and Clinical Outcomes: A Retrospective Case Series. *Pain Pract*. 2021;21(4):411-418. doi:10.1111/papr.12968
25. National Institute for Care and Health Excellence. Percutaneous electrical nerve stimulation for refractory neuropathic pain. <https://www.nice.org.uk/guidance/ipg450>. Published March 27, 2013. Accessed January 14, 2022.
26. Deer TR, Esposito MF, McRoberts WP, et al. A Systematic Literature Review of Peripheral Nerve Stimulation Therapies for the Treatment of Pain. *Pain Med*. 2020;21(8):1590-1603. doi:10.1093/pm/pnaa030
27. Hayes Medical Technology Directory. Peripheral nerve field stimulation for treatment of chronic low back pain. [www.hayesinc.com](http://www.hayesinc.com). Published April 22, 2021. Accessed January 14, 2022.
28. Rigoard P, Ounajim A, Goudman L, et al. The Added Value of Subcutaneous Peripheral Nerve Field Stimulation Combined with SCS, as Salvage Therapy, for Refractory Low Back Pain Component in Persistent Spinal Pain Syndrome Implanted Patients: A Randomized Controlled Study (CUMPNS Study) Based on 3D-Mapping Composite Pain Assessment. *J Clin Med*. 2021;10(21):5094. Published 2021 Oct 29. doi:10.3390/jcm10215094
29. Grider JS, Manchikanti L, Carayannopoulos A, et al. Effectiveness of Spinal Cord Stimulation in Chronic Spinal Pain: A Systematic Review. *Pain Physician*. 2016;19(1):E33-E54.
30. United States Food & Drug Administration. Senza Spinal Cord Stimulation System – P130022/S039. <https://www.fda.gov/medical-devices/recently-approved-devices/senza-spinal-cord-stimulation-system-p130022s039>. Published August 17, 2021. Accessed January 26, 2022.

### **Important Reminder**

This clinical policy has been developed by appropriately experienced and licensed health care professionals based on a review and consideration of currently available generally accepted standards of medical practice; peer-reviewed medical literature; government agency/program approval status; evidence-based guidelines and positions of leading national health professional organizations; views of physicians practicing in relevant clinical areas affected by this clinical policy; and other available clinical information. The Health Plan makes no representations and accepts no liability with respect to the content of any external information used or relied upon in developing this clinical policy. This clinical policy is consistent with standards of medical practice current at the time that this clinical policy was approved. “Health Plan” means a health

plan that has adopted this clinical policy and that is operated or administered, in whole or in part, by Centene Management Company, LLC, or any of such health plan's affiliates, as applicable.

The purpose of this clinical policy is to provide a guide to medical necessity, which is a component of the guidelines used to assist in making coverage decisions and administering benefits. It does not constitute a contract or guarantee regarding payment or results. Coverage decisions and the administration of benefits are subject to all terms, conditions, exclusions and limitations of the coverage documents (e.g., evidence of coverage, certificate of coverage, policy, contract of insurance, etc.), as well as to state and federal requirements and applicable Health Plan-level administrative policies and procedures.

This clinical policy is effective as of the date determined by the Health Plan. The date of posting may not be the effective date of this clinical policy. This clinical policy may be subject to applicable legal and regulatory requirements relating to provider notification. If there is a discrepancy between the effective date of this clinical policy and any applicable legal or regulatory requirement, the requirements of law and regulation shall govern. The Health Plan retains the right to change, amend or withdraw this clinical policy, and additional clinical policies may be developed and adopted as needed, at any time.

This clinical policy does not constitute medical advice, medical treatment or medical care. It is not intended to dictate to providers how to practice medicine. Providers are expected to exercise professional medical judgment in providing the most appropriate care, and are solely responsible for the medical advice and treatment of members/enrollees. This clinical policy is not intended to recommend treatment for members/enrollees. Members/enrollees should consult with their treating physician in connection with diagnosis and treatment decisions.

Providers referred to in this clinical policy are independent contractors who exercise independent judgment and over whom the Health Plan has no control or right of control. Providers are not agents or employees of the Health Plan.

This clinical policy is the property of the Health Plan. Unauthorized copying, use, and distribution of this clinical policy or any information contained herein are strictly prohibited. Providers, members/enrollees and their representatives are bound to the terms and conditions expressed herein through the terms of their contracts. Where no such contract exists, providers, members/enrollees and their representatives agree to be bound by such terms and conditions by providing services to members/enrollees and/or submitting claims for payment for such services.

**Note: For Medicaid members/enrollees**, when state Medicaid coverage provisions conflict with the coverage provisions in this clinical policy, state Medicaid coverage provisions take precedence. Please refer to the state Medicaid manual for any coverage provisions pertaining to this clinical policy.