

Spinal Cord and Peripheral Nerve Stimulators

LOB(s): ☑ Commercial	State(s): ⊠ Idaho	☑ Montana ☑ Oregon ☑ Washington ☐ Other:
⊠ Medicaid	⊠ Oregon	☐ Washington

Enterprise Policy

Clinical Guidelines are written when necessary to provide guidance to providers and members in order to outline and clarify coverage criteria in accordance with the terms of the Member's policy. This Clinical Guideline only applies to PacificSource Health Plans, PacificSource Community Health Plans, and PacificSource Community Solutions in Idaho, Montana, Oregon, and Washington. Because of the changing nature of medicine, this list is subject to revision and update without notice. This document is designed for informational purposes only and is not an authorization or contract. Coverage determinations are made on a case-by-case basis and subject to the terms, conditions, limitations, and exclusions of the Member's policy. Member policies differ in benefits and to the extent a conflict exists between the Clinical Guideline and the Member's policy, the Member's policy language shall control. Clinical Guidelines do not constitute medical advice nor guarantee coverage.

Background

Spinal cord stimulators, also known as dorsal column stimulation, involves the use of low-level epidural electrical stimulation of the spinal cord dorsal column, creating a paresthesia to alter the perception of pain. Spinal Cord Stimulators has been used in a wide variety of chronic refractory pain conditions, including complex regional pain syndrome, failed back surgery syndrome, critical limb ischemia, which is a non-destructive and reversible procedure. Spinal Cord Stimulators are indicated for cervical, thoracic, and lumbar spine.

Dorsal root ganglion stimulators are a more specific implanted Spinal Cord Stimulators that may be used to treat pain that starts in a lower part of the body (e.g., foot, knee, hip, and groin). Dorsal root ganglions are spinal structures densely populated with sensory nerves that transmit information to the brain via the spinal column. Physicians are able to directly treat targeted areas of the body where pain occurs through the use of a neurostimulator system.

Both Spinal Cord Stimulator and Dorsal root ganglion stimulator implantation requires a surgical procedure, conducted in two phases initiated with a trial period of Spinal Cord / Dorsal Root Ganglion Stimulators with a temporarily implanted lead. If successful pain reduction is reported during this trial, it may be followed by the second phase of permanent implantation.

Implanted Peripheral Nerve Stimulators, also known as Peripheral Nerve Field Stimulation, are used to electrically stimulate peripheral nerves to relieve severe intractable pain. The Peripheral Nerve Stimulators consists of an implanted receiver with electrodes that are placed around a peripheral nerve and an external transmitter. Implantation is a 2-step process. An initial trial using a temporary electrode is performed to confirm treatment success. If successful pain reduction is reported during this trial, it may be followed by the second phase of permanent implantation.

Commercial

Prior authorization is required.

I. Spinal Cord Stimulators; including Dorsal Root Ganglion Stimulators

PacificSource considers Spinal Cord and Dorsal Root Ganglion Stimulators to be medically necessary in a two-phase implementation when the following criteria is met:

- A. For Temporary (Trial) Spinal Cord Stimulators:
 - 1. Member has chronic neuropathic or ischemic pain including ONE or more of the following:
 - a. Complex regional pain syndrome
 - b. Failed back surgery syndrome
 - c. Critical limb ischemia

OR

- **B.** For Temporary (Trial) Dorsal Root Ganglion Stimulators
 - 1. The member has a diagnosis of moderate to severe chronic intractable pain of the lower limbs in persons with complex regional pain syndrome (CRPS) types I and II
 - 2. Member meets ALL of the criteria in section #C below

AND

- **C.** <u>ALL</u> of the below criteria is met for both Spinal Cord Stimulators and Dorsal Root Ganglion Stimulators:
 - 1. Imaging reports correlate with pain complaint or rules out other sources of pain (e.g., abnormal MRI);
 - **2.** Evidence of objective neurological impairment (e.g., abnormal reflexes, muscle weakness, segmental sensory loss, neurogenic bowel or bladder, long tract abnormalities)
 - **3.** Member has failed 12 or more months of conservative treatment modalities (e.g., pharmacological, surgical, physical therapy, cognitive therapy);
 - **4.** Evaluation and clearance by a mental health provider which revealed no evidence of a behavioral health diagnosis or diagnosis that are not adequately managed (e.g., alcohol or drug dependence, depression, psychosis).
 - 5. Absent of any contraindications listed below in Section E
- **D.** PacificSource considers <u>Permanent Spinal Cord Stimulators and Dorsal Root Ganglion</u> Stimulators medically necessary when **ALL** of the following criteria is met:
 - 1. The member has met ALL the above trial criteria
 - 2. Member experienced significant pain reduction (reduced by at least 50%) with the trial of spinal stimulation
 - 3. Absent of any contraindications listed below in Section E

- **E. Contraindications** for Temporary **AND** Permanent Spinal Cord or Dorsal Root Ganglion Stimulators, but not limited to the following:
 - 1. No severe or progressive neurological disorder or history of seizures
 - 2. No pacemakers, other implanted electrical devices, or brain stimulators
 - **3.** Some types of implanted metal object (e.g., dental implants, aneurysm clips, metallic prostheses, metal pins and rods, heart valves, and cochlear implants, permanent eyeliner, implanted delivery pump, or shrapnel fragments)
 - **4.** No history of coagulopathy, severe thrombocytopenia and/or currently on anticoagulant or antiplatelet therapy
 - **5.** Certain anatomical conditions (e.g., severe spondylolisthesis with stenosis, Scoliosis that creates difficulty with lead steering, previous surgery with epidural scarring)

II. Implanted Peripheral Nerve Stimulator

PacificSource considers <u>Implanted Peripheral Nerve Stimulators</u> to be medically necessary in a two-phase implementation when the following criteria is met:

- **A.** For Temporary (Trial) Implanted Peripheral Nerve Stimulator:
 - 1. Member is 18 years of age or older
 - 2. Member has at least **ONE** of the following conditions:
 - a. Failed back syndrome
 - b. Complex Regional Pain Syndrome
 - c. Craniofacial Pain Syndromes
 - d. Entrapment Neuropathies (Nerve Compression Syndrome or Compression Neuropathy)
 - e. Herpetic Neuropathy
 - f. Intractable Neuropathic Pain
 - g. Plexus avulsion
 - h. Reflex sympathetic dystrophy
 - i. Trigeminal neuralgia
 - **3.** Failed conservative management over a six-month period, including at least **3** of the following categories of pharmacotherapy:
 - a. Topical Treatments (e.g., capsaicin and lidocaine).
 - **b.** Opioids.
 - **c.** Antidepressants.
 - d. Anti-epileptic (anticonvulsant) drugs.
 - **4.** Members with neuropathic pain must have tried a stellate ganglion or sympathetic block.
 - **5.** Evaluation and clearance by a mental health provider which revealed no evidence of a behavioral health diagnosis or diagnosis that are not adequately managed (e.g., alcohol or drug dependence, depression, psychosis).

- **B.** PacificSource considers **Permanent Peripheral Nerve Stimulator** to be medically necessary when **ALL** of the following criteria is met:
 - 1. The member has met ALL the above trial criteria
 - 2. The Peripheral Nerve Stimulator trial period was at least 24 hours long with a documented reduction in pain by at least 50%
 - 3. Absent of any contraindications listed in Section C
- **C. Contraindications** for Temporary **AND** Permanent Peripheral Nerve Stimulator, but not limited to the following:
 - 1. No severe or progressive neurological disorder or history of seizures
 - 2. No pacemakers, other implanted electrical devices, or brain stimulators
 - **3.** Some types of implanted metal object (e.g., dental implants, aneurysm clips, metallic prostheses, metal pins and rods, heart valves, and cochlear implants, permanent eyeliner, implanted delivery pump, or shrapnel fragments)
 - **4.** No history of coagulopathy, severe thrombocytopenia and/or currently on anticoagulant or antiplatelet therapy
 - **5.** Certain anatomical conditions (e.g., severe spondylolisthesis with stenosis, Scoliosis that creates difficulty with lead steering, previous surgery with epidural scarring)

III. Revision

PacificSource may consider revision(s) of all, or parts of, an existing Spinal Cord Stimulator, Dorsal Root Ganglion Stimulator, or Peripheral Nerve Stimulator medically necessary after the device has been placed to allow for proper functioning of the device.

IV. Replacement

PacificSource considers replacement of all, or parts of, an existing Spinal Cord Stimulator, Dorsal Root Ganglion Stimulator, or Peripheral Nerve Stimulator medically necessary when **ALL** of the following is met:

- A. Device is malfunctioning
- B. Device cannot be repaired
- **C.** Device is no longer under warranty

Medicaid

PacificSource Community Solutions follows Guideline Note 178 of the OHP Prioritized List of Health Services for Spinal Cord Stimulation.

PacificSource Community Solutions (PCS) follows Oregon Health Plan (OHP) Oregon Administrative Rules (OARs) 410-141-3820 to 3825 & 410-120-1200 for coverage of Implanted Peripheral Nerve Stimulator.

PacificSource Community Solutions (PCS) follows Guideline Note 173 of the Oregon Health Plan (OHP) Prioritized List of Health Services for coverage of the associated CPT code 64555 to have insufficient evidence of effectiveness.

Medicare

PacificSource Medicare follows PacificSource Medicare follows National Coverage Determination Electrical Nerve Stimulators (NCD) 160.7.

PacificSource Medicare follows National Coverage Determination (NCD) 160.7 and Local Coverage Determination (LCD) L34328 for peripheral nerve stimulation.

Experimental/Investigational/Unproven

PacificSource considers dorsal column stimulation to be experimental, investigational, or unproven for all other indications including, but not limited to the following:

- Cancer-related pain
- Nociceptive pain
- Post -herpetic neuralgia
- Refractory angina pectoris
- Visceral pain

PacificSource considers peripheral nerve stimulation experimental, investigational, or unproven for all <u>other</u> indications.

PacificSource considers the ReActiv8 Implantable Neurostimulation System to be experimental, investigational, or unproven.

Coding Information

The following list of codes are for informational purposes only and may not be all-inclusive. Deleted codes and codes which are not effective at the time the service is rendered may not be eligible for reimbursement.

CPT Codes:

20680	Removal, Implant; Deep
63650	Percutaneous Implantation, Neurostimulator Electrode Array, Epidural
63655	Laminectomy, Implantation, Neurostimulator Electrodes, Plate/Paddle, Epidural
63661	Removal of Spinal Neurostimulator Electrode Percutaneous Array(s), Including Fluoroscopy, When Performed
63662	Removal of Spinal Neurostimulator Electrode Plate/Paddle(s) Placed Via Laminotomy or Laminectomy, inc Fluoro
63663	Revision including Replacement, When Performed, of Spinal Neurostimulator Electrode Percutaneous Array(s), inc Fluoro
63664	Revision inc Replacement, If Performed, of Spinal Neurostimr Electrode Plate/Paddles Place Via Laminotomy/Ectomy
63685	Incision/Placement, Spinal Neurostimulator Pulse Generator/Receiver

63688	Revision/Removal, Implanted Spinal Neurostimulator Pulse Generator/Receiver
64553	Percutaneous implantation of neurostimulator electrode array; cranial nerve
64555	Percutaneous implantation of neurostimulator electrode array peripheral nerve (excludes sacral nerve)
64575	Incision for 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
HCPCS	Codes:
C1767	Generator, neurostimulator (implantable)
C1820	Generator, neurostimulator (implantable), with rechargeable battery and charging system
C1822	Generator, neurostimulator, high frequency, with rechargeable battery and charging system-
C1823	Generator, neurostimulator (implantable), nonrechargeable, with transvenous sensing and stimulation leads
L8679	Implantable neurostimulator, pulse generator, any type
L8680	Implantable neurostimulator electrode, each-
L8681	Patient programmer (external) for use with implantable programmable neurostimulator pulse generator, replacement only
L8682	Implantable neurostimulator radiofrequency receiver
L8683	Radiofrequency transmitter (external) for use with implantable neurostimulator radiofrequency receiver
L8685	Implantable neurostimulator pulse generator, single array, rechargeable, includes extension
L8686	Implantable neurostimulator pulse generator, single array, nonrechargeable, includes extension
L8687	Implantable neurostimulator pulse generator, dual array, rechargeable, includes extension
L8688	Implantable neurostimulator pulse generator, dual array, nonrechargeable, includes extension
L8689	External recharging system for battery (internal) for use with implantable neurostimulator, replacement only
L8695	External recharging system for battery (external) for use with implantable neurostimulator, replacement only

CPT® codes, descriptions and materials are copyrighted by the American Medical Association (AMA). HCPCS® codes, descriptions and materials are copyrighted by Centers for Medicare and Medicaid Services (CMS)

Definitions

- **Fluoroscopy** an x-ray that produces real-time video images for procedural interventions.
- **Neuropathic pain** numbness, tingling, burning, or shooting pain that is often degenerative resulting from damage, disease, or dysfunction of one or more nerves.
- **Nociceptive pain** aching, throbbing, dull or sharp pain arising from receptors for tissue injury which are mostly located in the skin and internal organs.
- **Paresthesia** an abnormal sensation of the body, such as numbness, tingling or burning that is usually felt in the hands, arms, legs, or feet.
- **Peripheral implantable stimulation (PNS)** is a small electrical device placed next to the peripheral nerves in the subcutaneous tissue. PNS differs from PNFS and PSFS, as it targets a specific nerve, rather than a general area.
- **Peripheral nerve field stimulation (PNFS)** is a technology proposed for the treatment of chronic cervical, thoracic, or lumbar pain. Electrode leads are placed in subcutaneous tissue around the painful area, and electrical current is applied to create stimulation in the area, or "field" of pain.
- **Peripheral Subcutaneous Field Stimulation (PSFS)** is a modification of peripheral nerve stimulation and is similar to PNS, except PSFS involves electrical stimulation via electrodes implanted under the skin over the area of maximal pain, rather than targeting the nerve thought to be the origin of the pain, as is done in PNS.
- **Visceral pain** pain that arises from, in, or around internal organs.
- **Visual Analogue Scale (VAS)** a measurement instrument for acute and chronic pain, recorded by marking on a 10-cm line that represents a continuum between "no pain" and "worst pain".

Related Policies

New and Emerging Technologies – Coverage Status

References

Centers for Medicare & Medicaid Services. National Coverage Determination (NCD) for Electrical Nerve Stimulators (106.7) http://www.cms.gov/medicare-coverage-database/details/ncd-details.aspx?NCDId=240&ncdver=1&DocID=160.7&SearchType=Advanced&bc=IAAAABAAAAA&

Deer, T. R., Pope, J. E., Lamer, T. J., Grider, J. S., Provenzano, D., Lubenow, T. R., FitzGerald, J. J., Hunter, C., Falowski, S., Sayed, D., Baranidharan, G., Patel, N. K., Davis, T., Green, A., Pajuelo, A., Epstein, L. J., Harned, M., Liem, L., Christo, P. J., Chakravarthy, K., ... Mekhail, N. (2019). The Neuromodulation Appropriateness Consensus Committee on Best Practices for Dorsal Root Ganglion Stimulation. Neuromodulation: journal of the International Neuromodulation Society, 22(1), 1–35. https://doi.org/10.1111/ner.12845

Duarte RV, Nevitt S, Copley S, Maden M, de Vos CC, Taylor RS, Eldabe S. Systematic Review and Network Meta-analysis of Neurostimulation for Painful Diabetic Neuropathy. Diabetes Care. 2022 Oct

1;45(10):2466-2475. doi: 10.2337/dc22-0932. PMID: 36150057. https://pubmed.ncbi.nlm.nih.gov/36150057/

Feldman, E. (2022, August 30). Management of Diabetic Neuropathy. UpToDate. Retrieved April 25, 2023, from <a href="https://www.uptodate.com/contents/management-of-diabetic-neuropathy?search=Spinal+Cord+Stimulation+%28SCS%29+for+the+treatment+of+diabetic+peripher-al+neuropathy+&source=search_result&selectedTitle=5~150&usage_type=default&display_rank=5

Gaurav Gupta, M. D. (2022, October 24). Spinal cord stimulation. Background, Indications, Contraindications. Retrieved April 4, 2023, from https://emedicine.medscape.com/article/1980819-overview#a4

Hamm-Faber, T. E., Aukes, H. A., de Loos, F., & Gültuna, I. (2012). Subcutaneous stimulation as an additional therapy to spinal cord stimulation for the treatment of lower limb pain and/or back pain: a feasibility study. Neuromodulation: journal of the International Neuromodulation Society, 15(2), 108–117. https://pubmed.ncbi.nlm.nih.gov/21943376/

Hayes Knowledge Center. (May 5, 2022). Health Technology Assessment: Percutaneous Peripheral Nerve Stimulation for Treatment of Chronic Pain. https://evidence.hayesinc.com/report/hta.pns5224

Hayes Knowledge Center. (March 27, 2023). Health Technology Assessment: Spinal Cord Stimulation for Relief of Neuropathic Pain. Available at https://evidence.hayesinc.com/report/ar.584scspain

Hayes Knowledge Center. (March 27, 2023). Health Technology Assessment: Dorsal Root Ganglion Stimulation For the Treatment of Complex Regional Pain Syndrome. Available at: https://evidence.hayesinc.com/report/htb.drgcrps4164

Helm, S., Shirsat, N., Calodney, A., Abd-Elsayed, A., Kloth, D., Soin, A., Shah, S., & Trescot, A. (2021). Peripheral Nerve Stimulation for Chronic Pain: A Systematic Review of Effectiveness and Safety. Pain and therapy, 10(2), 985–1002. https://pubmed.ncbi.nlm.nih.gov/34478120/

Huygen, F., Kallewaard, J. W., Nijhuis, H., Liem, L., Vesper, J., Fahey, M. E., Blomme, B., Morgalla, M. H., Deer, T. R., & Capobianco, R. A. (2020). Effectiveness and Safety of Dorsal Root Ganglion Stimulation for the Treatment of Chronic Pain: A Pooled Analysis. Neuromodulation: journal of the International Neuromodulation Society, 23(2), 213–221.

Kramer, J., Liem, L., Russo, M., Smet, I., Van Buyten, J. P., & Huygen, F. (2015). Lack of body positional effects on paresthesias when stimulating the dorsal root ganglion (DRG) in the treatment of chronic pain. Neuromodulation: journal of the International Neuromodulation Society, 18(1), 50–57.

MCG Health 27th edition. Implanted Electrical Stimulator, Spinal Cord, A-0243.

Levy, R. M., Mekhail, N., Kramer, J., Poree, L., Amirdelfan, K., Grigsby, E., Staats, P., Burton, A. W., Burgher, A. H., Scowcroft, J., Golovac, S., Kapural, L., Paicius, R., Pope, J., Samuel, S., McRoberts, W. P., Schaufele, M., Kent, A. R., Raza, A., & Deer, T. R. (2020). Therapy Habituation at 12 Months: Spinal Cord Stimulation Versus Dorsal Root Ganglion Stimulation for Complex Regional Pain Syndrome Type I and II. *The journal of pain*, *21*(3-4), 399–408. https://doi.org/10.1016/j.jpain.2019.08.005

Madineni, R. A., Smith, C. M., Clark, S. W., Boorman, D. W., Wu, C., Wang, D., Harrop, J. S., & Sharan, A. D. (2018). Effect of Preoperative Opioid Dosage on Postoperative Period After Thoracic Spinal Cord Stimulator Surgery. Pain medicine (Malden, Mass.), 19(4), 693–698. https://doi.org/10.1093/pm/pnx250

National Institute for Health and Care Excellence (NICE). (March 2013). Interventional procedure guidance [IPG450] Percutaneous electrical nerve stimulation for refractory neuropathic pain. http://www.nice.org.uk/guidance/IPG450

North, R. B., Calodney, A., Bolash, R., Slavin, K. V., Creamer, M., Rauck, R., Vahedifar, P., Fox, I., Özaktay, C., Panchal, S., & Vanquathem, N. (2020). Redefining Spinal Cord Stimulation "Trials": A Randomized Controlled Trial Using Single-Stage Wireless Permanent Implantable Devices. Neuromodulation: journal of the International Neuromodulation Society, 23(1), 96–101. https://doi.org/10.1111/ner.12970

Rock, A. K., Truong, H., Park, Y. L., & Pilitsis, J. G. (2019). Spinal Cord Stimulation. Neurosurgery clinics of North America, 30(2), 169–194. https://doi.org/10.1016/j.nec.2018.12.003

Sayed, D., Foster, J., Nairizi, A., Sills, S., & Miller, A. (2020). 10 kHz High-Frequency Spinal Cord Stimulation for Chronic Thoracic Pain: A Multicenter Case Series and a Guide for Optimal Anatomic Lead Placement. Pain physician, 23(4), E369–E376. https://pubmed.ncbi.nlm.nih.gov/32709183/

Schwarm, F. P., Stein, M., Uhl, E., Maxeiner, H., & Kolodziej, M. A. (2019). A Retrospective Analysis of 25 Cases With Peripheral Nerve Field Stimulation for Chronic Low Back Pain and the Predictive Value of Transcutaneous Electrical Nerve Stimulation for Patient Selection. Neuromodulation: journal of the International Neuromodulation Society, 22(5), 607–614. https://pubmed.ncbi.nlm.nih.gov/30548104/

Sharma, M., Shaw, A., & Deogaonkar, M. (2014). Surgical options for complex craniofacial pain. Neurosurgery clinics of North America, 25(4), 763–775. http://www.ncbi.nlm.nih.gov/pubmed/25240663

Torre-Amione, G., Alo, K., Estep, J. D., Valderrabano, M., Khalil, N., Farazi, T. G., Rosenberg, S. P., Ness, L., & Gill, J. (2014). Spinal cord stimulation is safe and feasible in patients with advanced heart failure: early clinical experience. European journal of heart failure, 16(7), 788–795. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6321984/

Westrup, A. M., & Conner, A. K. (2021). Percutaneous Thoracic Spinal Cord Stimulator Placement. Cureus, 13(3), e13916. https://doi.org/10.7759/cureus.13916

Appendix

Policy Number:

Effective: 9/1/2021 **Next review:** 5/1/2024

Policy type: Enterprise

Author(s):

Depts: Health Services

Applicable regulation(s): NCD 160.7, LCD L34328, Oregon Administrative Rules 410-141-3820 to 3825 & 410-120-1200 for coverage of Implanted Peripheral Nerve Stimulator. PacificSource Community Solutions (PCS) follows Guideline Note 173 of the Oregon Health Plan (OHP)

Commercial OPs: 11/2023
Government OPs: 12/2023