

Medical Policy

Transcutaneous Electrical Nerve Stimulator (TENS Units)

Policy Number: 1066

Policy History

Approve Date:	06/01/2018	Effective Date:	06/01/2018
Reviewed/Revised Dates:	05/09/2019, 10/1/2019, 10/1/2020, 10/01/2021		

Preauthorization

All Plans	Benefit plans vary in coverage and some plans may not provide coverage for certain service(s) listed in this policy. Decisions for authorization are subject to all terms and conditions of the applicable benefit plan, including specific exclusions and limitations as well as applicable state and/or federal laws. Please review the benefit plan descriptions for details.
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Policy

Indications of Coverage

- I. Health Tradition considers Transcutaneous Electrical Nerve Stimulators (TENS) medically necessary and will approve for a 30 day trial when one of the following criteria are met:
 - A. Used as an adjunct or as an alternative to the use of drugs either in the treatment of acute post-operative pain in the first 30 days after surgery OR
 - B. For certain types of chronic intractable (minimum of three months duration) pain that has not adequately responsive to other methods of treatment including physical therapy and pharmacotherapy AND
 - C. The back pain is not a manifestation of a clearly identified and generally recognized primary disease entity, as metastatic cancers of the spine or Rheumatoid Arthritis.

- II. Ongoing treatment with transcutaneous electrical nerve stimulators is considered medically necessary IF
 - A. The treatment significantly alleviates the pain AND
 - B. Ordering physician documents that the member is likely to derive significant therapeutic benefit from continued use of the unit over a long period of time. (This documentation must include evaluations notes of the member after the initial trial period and must also indicate how often the member used the TENS unit, the typical duration of use each time, and the results).

- III. Health Tradition considers a form-fitting conductive garment medically necessary DME only when it has been approved for marketing by the FDA, has been prescribed by a doctor for delivering TENS for one of the medically necessary indications listed above, and any of the following criteria is met:
 - A. The member cannot manage without the conductive garment due to the large area or the large number of sites to be stimulated, and the stimulation would have to be delivered so frequently that it is not feasible to use conventional electrodes, adhesive tapes, and lead wires OR
 - B. The member has a medical need for rehabilitation strengthening following an injury where the nerve supply to the muscle is intact OR
 - C. The member has a skin problem or other medical conditions that precludes the application of conventional electrodes, adhesive tapes, and lead wires OR
 - D. The member requires electrical stimulation beneath a cast to treat disuse atrophy, where the nerve supply to the muscle is intact.

- IV. Health Tradition considers Transcutaneous Electrical Nerve Stimulators not medically necessary or appropriate for all other indications including but not limited to treatment of the following types of pain as there is inadequate peer review literature to support the efficacy:
- A. Acute pain other than acute post-operative pain
 - B. Chronic malignant pain
 - C. Acute and chronic headaches, including migraines
 - D. Adhesive capsulitis (frozen shoulder)
 - E. Chronic low back pain
 - F. Deep abdominal pain
 - G. Hip fracture pain
 - H. Neuropathic pain
 - I. Pelvic pain
 - J. Phantom pain
 - K. Stump pain
 - L. Temporomandibular joint (TMJ) pain
 - M. Musculoskeletal pain in hemophilia
 - N. Pain management in patients with burns
 - O. Peripheral arterial disease
 - P. Post total knee arthroplasty pain
 - Q. Rotator cuff disease (i.e. calcific tendinitis, rotator cuff tendinitis and subacromial rotator cuff disease)
- V. Health Tradition considers TENS with Low Level Laser Therapy (LLLT) e.g. the Neurolumen device for the treatment of Morton's neuroma and all other indications experimental and investigation because its clinical value has not been established.
- VI. Health Tradition considers combination stimulation devices experimental and investigational for all indications:
- A. ICS and muscle stimulator (e.g. RS-4i sequential stimulator, EMSI Tens/EMS-14) OR
 - B. TENS with ICS OR
 - C. TENS with NMES OR
 - D. TENS with Ultrasound device

Background

TENS uses a battery-operated device that applies electrical stimulation at the site of pain by wired electrodes that are taped to the surface of the skin. TENS can also be delivered through the use of a form-fitting conductive garment (for example, a garment with conductive fibers that are separated from the individual's skin by layers of fabric). This garment is applied when a condition exists that precludes conventional TENS electrode placement. TENS has been used to relieve pain related to musculoskeletal conditions, or pain associated with active or post-trauma injury.

References

1. Ventafridda V, et al. Transcutaneous stimulation in cancer pain. In: Advances in Pain Research and Therapy. Vol. 2. JJ Bonica, V Ventafridda, eds. New York, NY: Raven Press; 1979:509-515.
2. Deyo RA, Walsh NE, Martin DC, et al. A controlled trial of transcutaneous electrical nerve stimulation (TENS) and exercise for chronic low back pain. N Engl J Med. 1990;322(23):1627-1634.
3. Long DM. Fifteen years of transcutaneous electrical nerve stimulation for pain control. Stereotact Funct Neurosurg. 1991;56(1):2-19.
4. Agency for Healthcare Policy and Research (AHCPR), Acute Pain Management Guideline Panel. Acute pain management: Operative or medical procedures and trauma. Clinical Practice Guideline No. 1. AHCPR Publication No. 92-0032. Rockville, MD: AHCPR; February 1992.
5. Lander J, Fowler-Kerry S. TENS for children's procedural pain. Pain. 1993;52(2):209-216.
6. Jacox A, Carr DB, Payne R, et al. Management of cancer pain. Clinical Practice Guideline No. 9.

- AHCPR Publication No. 94-0592. Rockville, MD: Agency for Health Care Policy and Research; March 1994.
7. Bigos S, Bowyer O, Braen G, et al. Acute low back problems in adults. Clinical Practice Guideline, No. 14. AHCPR Publication No. 95-0642. Rockville, MD: Agency for Health Care Policy and Research (AHCPR); December 1994.
 8. Herman E, Williams R, Stratford P, et al. A randomized controlled trial of transcutaneous electrical nerve stimulation (CODETRON) to determine its benefits in a rehabilitation program for acute occupational low back pain. *Spine*. 1994;19(5):561-568.
 9. Forster EL, Kramer JF, Lucy SD, et al. Effect of TENS on pain, medications, and pulmonary function following coronary artery bypass graft surgery. *Chest*. 1994;106(5):1343-1348.
 10. Harvey M, Elliott M. Transcutaneous electrical nerve stimulation (TENS) for pain management during cavity preparations in pediatric patients. *ASDC J Dent Child*. 1995;62(1):49-51.
 11. Reeve J, Corabian P. Transcutaneous electrical nerve stimulation (TENS) and pain management. Ottawa, ON: Canadian Coordinating Office for Health Technology Assessment (CCOHTA); April 1995. Available at: <http://www.ccohta.ca/pubs/index.html>. Accessed March 22, 2000.
 12. U.S. Department of Health and Human Services, Health Care Financing Administration (HCFA). Technology Assessment Committee (TAC) minutes. November 5- 6, 1996. Baltimore, MD: HCFA; 1996. Available at: <http://www.hcfa.gov/events/1196tmin.htm>. Accessed March 22, 2000.
 13. Carroll D, Tramèr M, McQuay H, et al. Randomization is important in studies with pain outcomes: Systematic review of transcutaneous electrical nerve stimulation in acute postoperative pain. *Br J Anaesth*. 1996;77(6):798-803.
 14. Reeve J, Menon D, Corabian P. Transcutaneous electrical nerve stimulation (TENS): A technology assessment. *Int J Tech Assess Health Care*. 1996;12(2):299-324.
 15. McQuay HJ, Moore RA, Eccleston C, et al. Systematic review of outpatient services for chronic pain control. *Health Technol Assess*. 1997;1(6):1-137.
 16. van Tulder MW, Koes BW, Bouter LM. Conservative treatment of acute and chronic nonspecific low back pain: A systematic review of randomized controlled trials of the most common interventions. *Spine*. 1997;22(18):2128-2156.
 17. Carroll D, Tramèr M, McQuay H, et al. Transcutaneous electrical nerve stimulation in labour pain: A systematic review. *Br J Obstet Gynaecol*. 1997;104(2):169-175.
 18. Brodsky JB, Mark JB. Postthoracoscopy pain: Is TENS the answer? *Ann Thorac Surg*. 1997;63(3):608-610.
 19. Benedetti F, Amanzio M, Casadio C, et al. Control of postoperative pain by transcutaneous electrical nerve stimulation after thoracic operations. *Ann Thorac Surg*. 1997;63(3):773-776.
 20. McQuay HJ, Moore RA, Eccleston C, et al. Systematic review of outpatient services for chronic pain control. *Health Technol Assess*. 1997;1(6):i-iv, 1-135.
 21. Moore SR, Shurman J. Combined neuromuscular electrical stimulation and transcutaneous electrical nerve stimulation for treatment of chronic back pain: A double-blind, repeated measures comparison. *Arch Phys Med Rehabil*. 1997;78(1):55-60.
 22. Lampl C, Kreczi T, Klingler D. Transcutaneous electrical nerve stimulation in the treatment of chronic pain: Predictive factors and evaluation of the method. *Clin J Pain*. 1998;14(2):134-142.
 23. Chabal C, Fishbain DA, Weaver M, Heine LW. Long-term transcutaneous electrical nerve stimulation (TENS) use: Impact on medication utilization and physical therapy costs. *Clin J Pain*. 1998;14(1):66-73.
 24. Ghoname EA, Craig WF, White PF, et al. Percutaneous electrical nerve stimulation for low back pain: A randomized crossover study. *JAMA*. 1999;281(9):818-823.
 25. Osiri M, Welch V, Brosseau L, et al. Transcutaneous electrical nerve stimulation for knee osteoarthritis. *Cochrane Database Syst Rev*. 2000;(4):CD002823.
 26. Nnoaham KE, Kumbang J. Transcutaneous electrical nerve stimulation (TENS) for chronic pain. *Cochrane Database Syst Rev*. 2008;(3):CD003222.
 27. Price CIM, Pandyan AD. Electrical stimulation for preventing and treating post-stroke shoulder pain. *Cochrane Database Syst Rev*. 2000;(4):CD001698.
 28. Proctor ML, Smith CA, Farquhar CM, Stones RW. Transcutaneous electrical nerve stimulation and acupuncture for primary dysmenorrhoea. *Cochrane Database Syst Rev*. 2002;(1):CD002123.
 29. Kaye V, Brandstater ME. Transcutaneous electrical nerve stimulation. *eMedicine J*. 2002;3(1).
 30. Brosseau L, Milne S, Robinson V, et al. Efficacy of the transcutaneous electrical nerve stimulation for

- the treatment of chronic low back pain: A meta-analysis. *Spine*. 2002;27(6):596-603.
31. U.S. Department of Veterans Affairs, Technology Assessment Program (VATAP). Transcutaneous electrical nerve stimulation. Bibliography. Boston, MA: VATAP; November 2001. Available at: <http://www.va.gov/VATAP/publications.htm>. Accessed January 17, 2006.
 32. Harris GR, Susman JL. Managing musculoskeletal complaints with rehabilitation therapy: Summary of the Philadelphia Panel evidence-based clinical practice guidelines on musculoskeletal rehabilitation interventions. *J Fam Pract*. 2002;51(12):1042-1046.
 33. Brosseau L, Yonge KA, Robinson V, et al. Transcutaneous electrical nerve stimulation (TENS) for the treatment of rheumatoid arthritis in the hand. *Cochrane Database Syst Rev*. 2003;(2):CD004377.
 34. Weiner DK, Ernst E. Complementary and alternative approaches to the treatment of persistent musculoskeletal pain. *Clin J Pain*. 2004;20(4):244-255.
 35. Bronfort G, Nilsson N, Haas M, et al. Non-invasive physical treatments for chronic/recurrent headache. *Cochrane Database Syst Rev*. 2004;(3):CD001878.
 36. Khadilkar A, Odebiyi DO, Brosseau L, et al. Transcutaneous electrical nerve stimulation (TENS) versus placebo for chronic low-back pain. *Cochrane Database Syst Rev*. 2008;(4):CD003008.
 37. Robb KA, Bennett MJ, Johnson MI, et al. Transcutaneous electric nerve stimulation (TENS) for cancer pain in adults. *Cochrane Database Syst Rev*. 2008;(3):CD006276.
 38. Pichon Riviere A, Augustovski F, Alcaraz A, et al. Transcutaneous electrical nerve stimulation (TENS-PENS) for back pain. Report IRR No. 89. Buenos Aires, Argentina: Institute for Clinical Effectiveness and Health Policy (IECS); 2006.
 39. Johnson M, Martinson M. Efficacy of electrical nerve stimulation for chronic musculoskeletal pain: A meta-analysis of randomized controlled trials. *Pain*. 2007;130(1-2):157-165.
 40. Tricenturion LLC. Transcutaneous electrical nerve stimulators (TENS). Local Coverage Determination (LCD) No. L11506. DMERC Region A/B. Columbia, SC: Tricenturion; January 1, 2006.
 41. Kroeling P, Gross A, Goldsmith CH, et al. Electrotherapy for neck pain. *Cochrane Database Syst Rev*. 2009;(4):CD004251.
 42. Dowswell T, Bedwell C, Lavender T, Neilson JP. Transcutaneous electrical nerve stimulation (TENS) for pain relief in labour. *Cochrane Database Syst Rev*. 2009;(2):CD007214.
 43. Savigny P, Kuntze S, Watson P, et al. Low back pain: Early management of persistent non-specific low back pain. Full Guideline. London, UK: National Collaborating Centre for Primary Care and Royal College of General Practitioners; May 2009.
 44. Desantana JM, Sluka KA, Lauretti GR. High and low frequency TENS reduce postoperative pain intensity after laparoscopic tubal ligation: A randomized controlled trial. *Clin J Pain*. 2009;25(1):12-19.
 45. Walsh DM, Howe TE, Johnson MI, Sluka KA. Transcutaneous electrical nerve stimulation for acute pain. *Cochrane Database Syst Rev*. 2009;(2):CD006142.
 46. Robb K, Oxberry SG, Bennett MI, et al. A Cochrane systematic review of transcutaneous electrical nerve stimulation for cancer pain. *J Pain Symptom Manage*. 2009;37(4):746-753.
 47. Dubinsky RM, Miyasaki J. Assessment: Efficacy of transcutaneous electric nerve stimulation in the treatment of pain in neurologic disorders (an evidence-based review). Report of the Therapeutics and Technology Assessment Subcommittee of the American Academy of Neurology. *Neurology*. 2010;74(1):173-176.
 48. Mulvey MR, Bagnall AM, Johnson MI, Marchant PR. Transcutaneous electrical nerve stimulation (TENS) for phantom pain and stump pain following amputation in adults. *Cochrane Database Syst Rev*. 2010;(5):CD007264.
 49. Pichon Riviere A, Augustovski F, Garcia Marti S, et al. Electrical stimulation for the treatment of headaches [summary]. IRR No. 198. Buenos Aires, Argentina: Institute for Clinical Effectiveness and Health Policy (IECS); July 2010.
 50. Cheing GL, Luk ML. Transcutaneous electrical nerve stimulation for neuropathic pain. *J Hand Surg Br*. 2005;30(1):50-55.
 51. Demarin V, Basić-Kes V, Zavoreo I, et al; Ad hoc Committee of the Croatian Society for Neurovascular Disorders; Croatian Medical Association. Recommendations for neuropathic pain treatment. *Acta Clin Croat*. 2008;47(3):181-191.
 52. Norrbrink C. Transcutaneous electrical nerve stimulation for treatment of spinal cord injury neuropathic pain. *J Rehabil Res Dev*. 2009;46(1):85-93.
 53. Moharic M, Burger H. Effect of transcutaneous electrical nerve stimulation on sensation thresholds in patients with painful diabetic neuropathy: An observational study. *Int J Rehabil Res*. 2010;33(3):211-

217.

54. Jin DM, Xu Y, Geng DF, Yan TB. Effect of transcutaneous electrical nerve stimulation on symptomatic diabetic peripheral neuropathy: A meta-analysis of randomized controlled trials. *Diabetes Res Clin Pract.* 2010;89(1):10-15.
55. Johnson MI, Bjordal JM. Transcutaneous electrical nerve stimulation for the management of painful conditions: Focus on neuropathic pain. *Expert Rev Neurother.* 2011;11(5):735-753.
56. Abou-Setta AM, Beaupre LA, Rashiq S, et al. Comparative effectiveness of pain management interventions for hip fracture: A systematic review. *Ann Intern Med.* 2011;155(4):234-245.
57. Centers for Medicare & Medicaid Services. Decision memo for transcutaneous electrical nerve stimulation for chronic low back pain (CAG-00429N). June 8, 2012. CMS: Baltimore, MD. Available at: <http://www.cms.gov/medicare-coverage-database/details/nca-decision-memo.aspx?NCAId=256>. Accessed October 19, 2012.
58. Kroeling P, Gross A, Graham N, et al. Electrotherapy for neck pain. *Cochrane Database Syst Rev.* 2013;(8):CD004251.
59. Chesterton LS, Lewis AM, Sim J, et al. Transcutaneous electrical nerve stimulation as adjunct to primary care management for tennis elbow: Pragmatic randomised controlled trial (TATE trial). *BMJ.* 2013;347:f5160.
60. National Institute for Health and Clinical Excellence (NICE).. Percutaneous electrical nerve stimulation for refractory neuropathic pain. *Interventional Procedure Guidance 450.* London, UK: NICE; March 2013.
61. Page MJ, Green S, Kramer S, et al. Electrotherapy modalities for adhesive capsulitis (frozen shoulder). *Cochrane Database Syst Rev.* 2014;10:CD011324.
62. Zeng C, Li H, Yang T, et al. Electrical stimulation for pain relief in knee osteoarthritis: Systematic review and network meta-analysis. *Osteoarthritis Cartilage.* 2015;23(2):189-202.
63. Johnson MI, Mulvey MR, Bagnall AM. Transcutaneous electrical nerve stimulation (TENS) for phantom pain and stump pain following amputation in adults. *Cochrane Database Syst Rev.* 2015;8:CD007264.