# Clinical UM Guideline

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| **Subject:** | Electrical Nerve Stimulation, Transcutaneous, Percutaneous | | |
| **Guideline #:** | CG-DME-04 | **Publish Date:** | 06/28/2024 |
| **Status:** | Reviewed | **Last Review Date:** | 05/09/2024 |

## Description

This document addresses transcutaneous electrical nerve stimulation (TENS) and percutaneous electrical nerve stimulation (PENS). Electrical stimulation is a method used to treat pain through electrodes placed on or just beneath the skin that send small electrical impulses to underlying sensory nerve fibers to modify pain perception. It is theorized that electrical stimulation of the nerve fibers, applied near the segment of the spinal cord, blocks pain signals from reaching the brain. Electrical stimulation is also theorized to reduce inflammation and swelling, and to relax muscle fibers by releasing endorphins in the brain, which act like analgesics. The use of acupuncture with electrical stimulation is *not* addressed in this document.

**Note:** Transcutaneous electrical modulation pain reprocessing ([TEMPR], e.g. Scrambler Therapy) using multichannel TENS devices are addressed by DME.00011 Electrical Stimulation as a Treatment for Pain and Other Conditions: Surface and Percutaneous Devices.

**Note:** Please see the following related document(s) for additional information:

- CG-ANC-03 Acupuncture
- CG-DME-03 Neuromuscular Stimulation in the Treatment of Muscle Atrophy
- CG-SURG-09 Temporomandibular Disorders

## Clinical Indications

**Medically Necessary:**

A. TENS and PENS units are considered **medically necessary** when prescribed as a treatment for pain for those who have not responded to other modalities, in the following situations:
   1. Pain related to musculoskeletal conditions; **or**
   2. Pain associated with active or post trauma injury.

B. A TENS garment, when prescribed, is considered **medically necessary** when:
   1. There is a large area or many sites to be stimulated such that use of conventional electrodes, adhesive tapes and lead wires is not feasible; **or**
   2. The areas or sites to be stimulated are inaccessible with the use of conventional electrodes, adhesive tapes and lead wires; **or**

3. There is a documented medical condition such as skin problems that preclude the application of conventional electrodes, adhesive tapes and lead wires.

**Not Medically Necessary:**

Use of TENS and PENS is considered **not medically necessary** when the above criteria are not met and for all other indications.

## Coding

*The following codes for treatments and procedures applicable to this document are included below for informational purposes. Inclusion or exclusion of a procedure, diagnosis or device code(s) does not constitute or imply member coverage or provider reimbursement policy. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage of these services as it applies to an individual member.*

**When services may be Medically Necessary when criteria are met:**

**HCPCS**

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| A4595 | Electrical stimulator supplies, 2 lead, per month (e.g., TENS, NMES) |
| A4630 | Replacement batteries, medically necessary, transcutaneous electrical stimulator, owned by patient |
| E0720 | Transcutaneous electrical nerve stimulation (TENS) device, two lead, localized stimulation |
| E0730 | Transcutaneous electrical nerve stimulation (TENS) device, four or more leads, for multiple nerve stimulation |
| E0731 | Form-fitting conductive garment for delivery of TENS or NMES (with conductive fibers separated from the patient's skin by layers of fabric) [when specified for TENS] |

**ICD-10 Diagnosis**

All diagnoses

**When services are Not Medically Necessary:**
For the procedure codes listed above when criteria are not met or for all other indications.

## Discussion/General Information

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.

PENS is similar in concept to TENS, but differs in that needle electrodes are implanted just beneath the skin instead of being taped to the surface of the skin. It is important to distinguish PENS from *acupuncture with electrical*

*stimulation.* In electrical acupuncture, needle electrodes are also inserted just below the skin, but they are not necessarily inserted at the site of pain, but placed according to acupuncture meridians, a concept of Chinese medicine.

There are many published reports regarding the use of TENS and PENS for various types of conditions such as low back pain (LBP), myofascial and arthritic pain, sympathetically mediated pain, neurogenic pain, visceral pain, diabetic neuropathy and postsurgical pain. While randomized controlled trials (RCTs) have focused on both TENS and PENS, many of the currently available studies have methodological flaws that limit interpretation, including inadequate blinding, lack of reporting of drop outs, lack of reporting of stimulation variables, and lack of proper outcome measures (Johnson, 2015b). However, it is recognized that both TENS and PENS are widely accepted in the physician community as a treatment of a variety of etiologies of pain.

The American Society of Anesthesiologists (ASA) and American Society of Regional Anesthesia and Pain Medicine (ASRA) support the use of TENS in their revised guideline recommending that "TENS should be used as a multimodal approach to pain management for patients with chronic back pain and may be used for other pain conditions (e.g. neck and phantom limb pain)" (ASA/ASRA, 2010).

Current published studies of PENS for neuropathic pain (Raphael, 2011), overactive bladder (Casal-Beloy, 2021; de Abreu, 2021; Pierre, 2021) and TENS for gastric dysmotility with slow transit constipation (Yik, 2011), have shown limited success, but require adequately powered RCTs with generalizable population samples to demonstrate clinical efficacy.

Several trials, systematic reviews and meta-analyses have been published evaluating the use of TENS in a variety of pain-types, injuries and disorders including, but not limited to, type 2 diabetes (Lu, 2023), inguinal hernia repair (Parselenes, 2021), migraine headache (Domingues, 2021; Hokenek, 2021; Tao, 2018) spinal cord injury (Harvey, 2016), rotator cuff injuries (Desmeules, 2016; Mahure, 2017; Page, 2016), soft tissue injuries of the elbow (Dion, 2016), knee osteoarthritis (Chen, 2016; Cherian, 2016; Reichenbach, 2022; Wu 2022), xerostomia (Sivaramakrishnan, 2017), postoperative gastrointestinal recovery (Penfold, 2018) sickle cell disease (Pal, 2020), pelvic pain (Cottrell, 2019), urinary retention (Coolen, 2021) peripheral neuropathy (Ogle, 2020) and phantom stump pain (Johnson, 2015a); results revealed weak or inconclusive support for the use of TENS for these indications. Support for the use of TENS was found in systematic reviews conducted on its application in the treatment of dyspareunia, (Fernández-Pérez, 2023); temporomandibular disorders (Busse, 2023; Fertout, 2019; Serrano-Muñoz D), in-office and post hysteroscopy (De Silva, 2020; Ghamry, 2020) chronic back pain (Jauregui, 2016), dysmenorrhea (Arik, 2022; Guy, 2023), total knee arthroplasty (Li, 2017; Yue, 2018; Zhu, 2017), multiple sclerosis (Sawant, 2015), post cardiothoracic surgery (Cardinali, 2021) and limb spasticity (Mahmood, 2019; Mills, 2016).

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**Peer Reviewed Publications:**

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**Government Agency, Medical Society and Other Authoritative Publications:**

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    - Supplies used in the delivery of transcutaneous electrical nerve stimulation (TENS) and neuromuscular electrical stimulation (NMES). NCD #160.13. Effective July 14, 1988.
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## Index



## History

| Status | Date | Action |
|---|---|---|
| Reviewed | 05/09/2024 | Medical Policy & Technology Assessment Committee (MPTAC) review. Updated Discussion/General Information and References sections. |
| Reviewed | 05/11/2023 | MPTAC review. Updated Discussion/General Information and References sections. |
| Reviewed | 05/12/2022 | MPTAC review. Updated Discussion/General Information and References sections. |
| Revised | 05/13/2021 | MPTAC review. Clarified MN statements by removing 'FDA approved' language. Updated Discussion/General Information and References sections. Reformatted Coding section. |
| Reviewed | 05/14/2020 | MPTAC review. Updated Description, Discussion/General Information and References sections. |
| Reviewed | 06/06/2019 | MPTAC review. Updated Description, Discussion/General Information and References sections. |
| Revised | 07/26/2018 | MPTAC review. The document header wording updated from "Current Effective Date" to "Publish Date." Updated Discussion/General Information and References sections. |
| Revised | 08/03/2017 | MPTAC review. Added a NMN section. Updated Discussion/General Information and References sections. |
| Reviewed | 08/04/2016 | MPTAC review. Updated Discussion/General Information and References. Removed ICD-9 codes from Coding section. |
| Revised | 08/06/2015 | MPTAC review. Revised formatting in criteria. Updated Discussion/General Information and References. |
| Reviewed | 08/14/2014 | MPTAC review. Updated Discussion/General Information and References. |
| Reviewed | 08/08/2013 | MPTAC review. Updated References. |
| Reviewed | 08/03/2012 | MPTAC review. Discussion/General Information and References updated. |
| Reviewed | 08/18/2011 | MPTAC review. Coding and References updated. |
| Reviewed | 08/19/2010 | MPTAC review. Discussion and References updated. |
| Reviewed | 08/27/2009 | MPTAC review. References updated. |
| Reviewed | 08/28/2008 | MPTAC review. References updated. |
| Reviewed | 08/23/2007 | MPTAC review. References updated. |
| | 01/01/2007 | Updated coding section with 01/01/2007 CPT/HCPCS changes. |
| Revised | 09/14/2006 | MPTAC review. Revision included addressing TENS garment. References updated. |

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|---|---|---|
| | 11/22/2005 | Added reference for Centers for Medicare and Medicaid Services (CMS) – National Coverage Determination (NCD). |
| Revised | 09/22/2005 | MPTAC review. Revisions based on Pre-merger Anthem and Pre-merger WellPoint Harmonization. |

| Pre-Merger Organizations | Last Review Date | Document Number | Title |
|---|---|---|---|
| Anthem, Inc. | | None | |
| Anthem BCBS | | None | |
| WellPoint Health Networks, Inc. | 04/28/2005 | 5.10.01 | Electrical Nerve Stimulation, Transcutaneous, Percutaneous |