

Subject: Electrical Nerve Stimulation, Transcutaneous, Percutaneous

Guideline #: CG-DME-04 **Publish Date:** <u>07/07/2021</u>07/08

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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 Related 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

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Clinical Indications

Medically Necessary:

- A. Food and Drug Administration (FDA) approved 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 An FDA approved 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,

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diabetic neuropathy and postsurgical pain. While randomized controlled trials (RCTs) have focused on both TENS and PENS, all-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) and TENS for gastric dysmotility with slow transit constipation (Yik, 2011), have shown limited success, but require larger studies 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, chronic neck pain (Martimbianco, 2019), migraine headache (Hokenek, 2021; Tao, 2018) spinal cord injury (Harvey, 2016), rotator cuff injuries (Desmeules, 2016; Mahure, 2017; Page, 2016), soft tissues injuries of the elbow (Dion, 2016), fibromyalgia (Johnson, 2017), knee osteoarthritis (Chen, 2016; Cherian, 2016), xerostomia (Sivaramakrishnan, 2017), postoperative gastrointestinal recovery (Penfold, 2018) sickle cell disease (Pal, 2020), pelvic pain (Cottrell, 2019), 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 temporomandibular disorders (Fertout, 2019), in-office and post hysteroscopy (De Silva, 2020; Ghamry, 2020) chronic back pain (Jauregui, 2016), total knee arthroplasty (Li, 2017; Yue, 2018; Zhu, 2017), multiple sclerosis (Sawant, 2015), post cardiothoracic surgery (Cardinali, 2020) and limb spasticity (Mahmood, 2019; Mills, 2016).

References

Peer Reviewed Publications:

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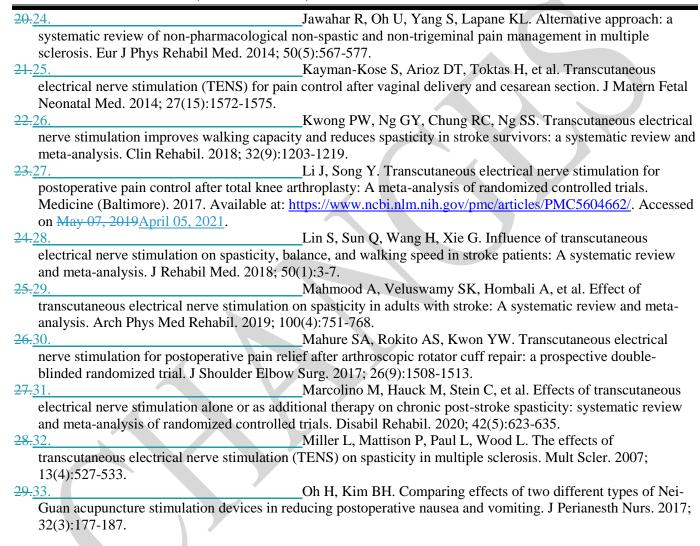
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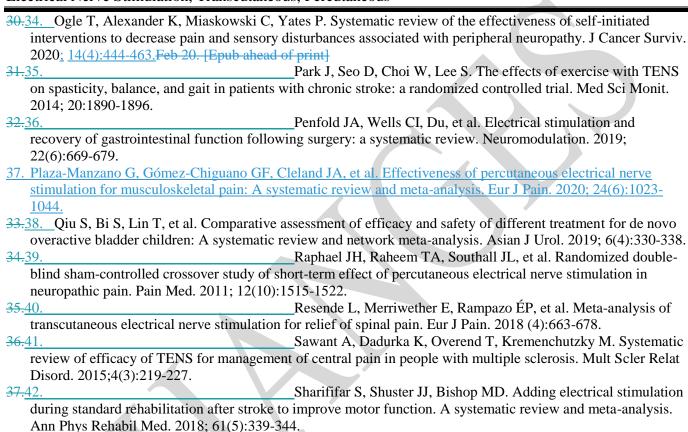


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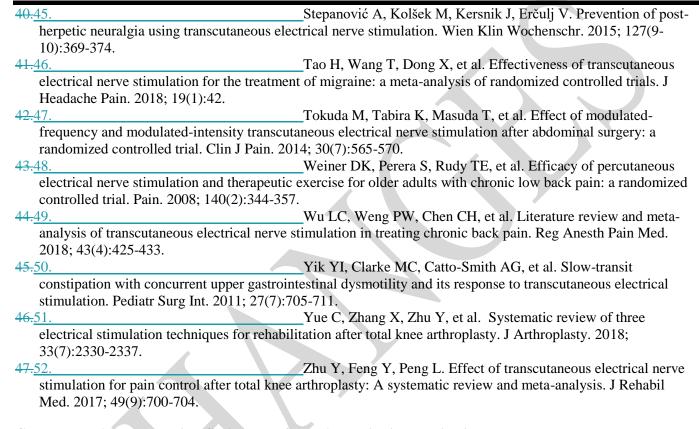
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Percutaneous Electrical Nerve Stimulation (PENS)
TENS (Transcutaneous Electrical Nerve Stimulation)

Transcutaneous Electrical Nerve Stimulation (TENS)

History

Status	Date	Action
Revised	05/13/2021	Medical Policy & Technology Assessment Committee (MPTAC) review.
		Clarified MN statements by removing 'FDA approved' language. Updated
		Discussion/General Information and References sections. Reformatted Coding
		section.

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Alternatively, commercial or FEP plans or lines of business which determine there is not a need to adopt the guideline to review services generally across all providers delivering services to Plan's or line of business's members may instead use the clinical guideline for provider education and/or to review the medical necessity of services for any provider who has been notified that his/her/its claims will be reviewed for medical necessity due to billing practices or claims that are not consistent with other providers, in terms of frequency or in some other manner.

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Electrical Nerve Stimulation, Transcutaneous, Percutaneous

Reviewed	05/14/2020	Medical Policy & Technology Assessment Committee (MPTAC) review.				
				Information and References		
		sections.				
Reviewed	06/06/2019	MPTAC review. Updated Description, Discussion/General Information and				
		References section	s.			
Revised	07/26/2018	MPTAC review. The document header wording updated from "Current				
				ed Discussion/General Information		
		and References sec				
Revised	08/03/2017			Jpdated Discussion/General		
		Information and Re				
Reviewed	08/04/2016			eral Information and References.		
			odes from Coding section			
Revised	08/06/2015			teria. Updated Discussion/General		
		Information and Re				
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		ction with 01/01/2007 (
Revised	09/14/2006		MPTAC review. Revision included addressing TENS garment. References			
		updated.				
1	11/22/2005			and Medicaid Services (CMS) –		
		_	Determination (NCD).			
Revised	09/22/2005	MPTAC review. Revisions based on Pre-merger Anthem and Pre-merger				
		WellPoint Harmon	ization.			
Pre-Merger Organizations		Last Review	Document	Title		
		Date	Number			
Anthem, Inc.			None			

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Electrical Nerve Stimulation, Transcutaneous, Percutaneous Anthem BCBS None WellPoint Health Networks, Inc. 04/28/2005 5.10.01 Electrical Nerve Stimulation, Transcutaneous, Percutaneous

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