



Transcutaneous Spinal Stimulation

Effective: October 1, 2026

Next Review: September 2027

Last Review: September 2026

IMPORTANT REMINDER

Medical Policies are developed to provide guidance for members and providers regarding coverage in accordance with contract terms. Benefit determinations are based in all cases on the applicable contract language. To the extent there may be any conflict between the Medical Policy and contract language, the contract language takes precedence.

PLEASE NOTE: Contracts exclude from coverage, among other things, services or procedures that are considered investigational or cosmetic. Providers may bill members for services or procedures that are considered investigational or cosmetic. Providers are encouraged to inform members before rendering such services that the members are likely to be financially responsible for the cost of these services.

DESCRIPTION

Transcutaneous spinal stimulation involves delivery of pulsed electrical stimulation through electrodes that are placed on the surface of the skin.

MEDICAL POLICY CRITERIA

The use of transcutaneous spinal stimulation is considered **investigational** for all indications, including but not limited to individuals with spinal cord injuries.

NOTE: A summary of the supporting rationale for the policy criteria is at the end of the policy.

CROSS REFERENCES

1. [Transcutaneous Electrical Modulation Pain Reprocessing](#). Medicine, Policy No. 143

BACKGROUND

TRANSCUTANEOUS SPINAL STIMULATION

Transcutaneous spinal stimulation involves delivery of pulsed electrical stimulation through electrodes that are placed on the surface of the skin.

REGULATORY STATUS

The ExaStim® Stimulation System received FDA 510(k) clearance in April 2026 for use in individuals with incomplete spinal cord injuries to increase hand sensation and strength. (Product Code: SDO)

EVIDENCE SUMMARY

Systematic Reviews

Hernandez-Navarro (2025) published a systematic review of 12 studies including 341 individuals who underwent non-invasive cerebral or spinal cord stimulation treatment.^[1] The primary outcomes were Lower Extremity Motor Scale (LMES) and gait speed. Results when all modalities were pooled together showed improvement in these outcomes, however subgroup analysis based on treatment modality showed diminished results and significance. Only a single study was included on transcutaneous spinal stimulation and therefore insufficient data to perform a statistical meta analysis. The authors indicate additional randomized trials are needed to understand the effect of transcutaneous spinal stimulation.

Garcia-Alen (2024) published a systematic review of 25 studies on various neuromodulation modalities for upper limb motor strength and functionality in individuals with spinal cord injuries.^[2] A meta-analysis was not completed due to the lack of functional and motor evaluations. Only two of the included studies were for transcutaneous spinal stimulation and both were of low quality. The authors indicate that randomized trials with standardized outcome measures are needed.

Kanakakis (2024) published a systematic review of 37 studies including 192 individuals who underwent epidural electrical stimulation, transcutaneous spinal stimulation, or functional electrical stimulation.^[3] One randomized trial was included for transcutaneous spinal stimulation in addition to numerous nonrandomized studies or case series and reports. The authors report there may be some improvements in the existing studies however additional high quality trials are needed with standardized treatment protocols and stimulation parameters.

Megia Garcia (2020) published a systematic review of 13 studies including 55 individuals who underwent transcutaneous spinal cord stimulation for spinal cord injuries.^[4] The primary outcomes were motor response as measured by voluntary movement, muscle strength, function, or surface electromyography. Each of the included studies showed improvement in motor response however the studies are significantly limited by their study design, sample size, and heterogeneity of electrode location and intensity.

Randomized Controlled Trials

No randomized controlled trials were identified not addressed by the included systematic reviews.

Nonrandomized Studies

No additional nonrandomized studies were identified not addressed by the included systematic reviews.

Section Summary

There is a lack of high quality evidence for the effectiveness of transcutaneous spinal stimulation for any indication, including but not limited to individuals with incomplete spinal cord injuries. The available evidence is of low quality with small sample sizes and significant heterogeneity in treatment type and protocols. Additional high quality trials with larger sample sizes, standardized treatment protocols, long-term follow up, and comparator groups are required to establish the efficacy of this treatment.

PRACTICE GUIDELINE SUMMARY

There are no clinical practice guidelines which recommend the use of transcutaneous spinal stimulation for any indication.

SUMMARY

There is not enough research to show that transcutaneous spinal stimulation improves net health outcomes for any indication. There are no clinical practice guidelines that recommend the use of transcutaneous spinal stimulation for any indication. Therefore, transcutaneous spinal stimulation is considered investigational for all indications, including but not limited to individuals with spinal cord injuries.

REFERENCES

1. Hernandez-Navarro A, Ros-Alsina A, Yurtseven M, et al. Non-invasive cerebral and spinal cord stimulation for motor and gait recovery in incomplete spinal cord injury: systematic review and meta-analysis. *J Neuroeng Rehabil*. 2025;22(1):53. PMID: 40050875
2. García-Alén L, Ros-Alsina A, Sistach-Bosch L, et al. Noninvasive Electromagnetic Neuromodulation of the Central and Peripheral Nervous System for Upper-Limb Motor Strength and Functionality in Individuals with Cervical Spinal Cord Injury: A Systematic Review and Meta-Analysis. *Sensors (Basel)*. 2024;24(14). PMID: 39066092
3. Kanakis AK, Benetos IS, Evangelopoulos DS, et al. Electrical Stimulation and Motor Function Rehabilitation in Spinal Cord Injury: A Systematic Review. *Cureus*. 2024;16(5):e61436. PMID: 38947571
4. Megía García A, Serrano-Muñoz D, Taylor J, et al. Transcutaneous Spinal Cord Stimulation and Motor Rehabilitation in Spinal Cord Injury: A Systematic Review. *Neurorehabil Neural Repair*. 2020;34(1):3-12. PMID: 31858871

CODES

Codes	Number	Description
CPT	1100T	Transcutaneous spinal neuromodulation programming, including history and physical examination, safety screening, selection and external placement of a multichannel spinal electrode pad, baseline spinal motor mapping, creation of individualized stimulation parameter sets for therapeutic activities, and patient and/or caregiver instruction, each 30 minutes
	1101T	Transcutaneous spinal neuromodulation application in combination with therapeutic activities, direct (one-on-one) patient contact using dynamic

Codes	Number	Description
		activities to improve functional performance, including individualized external placement of a multichannel spinal electrode pad, optimization of stimulation parameters across multiple channels, and delivery of transcutaneous spinal neuromodulation during functional task performance, each 15 minutes
HCPCS	None	

Date of Origin: September 2026