Medical Coverage Policy | Electrical Stimulation and Electromagnetic Therapy for Wound Treatments

EFFECTIVE DATE: 06|01|2023
POLICY LAST REVIEWED: 02|19|2025

OVERVIEW

Electrical stimulation or electrostimulation (ES) refers to the application of electrical current through electrodes placed directly on the skin. Electromagnetic therapy involves the application of electromagnetic fields, rather than direct electrical current. Both are proposed as treatments for wounds, generally chronic wounds.

Note: This policy is applicable to Commercial Products only. For Medicare Advantage Plans, please see Related Policies section below.

MEDICAL CRITERIA

Not applicable

PRIOR AUTHORIZATION

Not applicable

POLICY STATEMENT

Commercial Products

The following are considered not medically necessary as the evidence is insufficient to determine the effects of the technology on health outcomes:

- Electrical stimulation for the treatment of wounds including, but not limited to, low-intensity direct current, high-voltage pulsed current, alternating current, and transcutaneous electrical nerve stimulation
- Electrical stimulation performed by individuals in the home setting for the treatment of wounds
- Electromagnetic therapy for the treatment of wounds

COVERAGE

Benefits may vary between groups and contracts. Please refer to the appropriate Benefit Booklet, Evidence of Coverage, or Subscriber Agreement for applicable not medically benefits/coverage.

BACKGROUND

Conventional or standard therapy for chronic wounds involves local wound care, as well as systemic measures including debridement of necrotic tissues, wound cleansing, and dressing that promotes a moist wound environment, antibiotics to control infection, and optimizing nutritional supplementation. Avoidance of weight-bearing is another important component of wound management.

Electrostimulation

Since the 1950s, investigators have used electrostimulation to promote wound healing, based on the theory that electrostimulation may:

- Increase adenosine 5'-triphosphate concentration in the skin;
- Increase DNA synthesis;
- Attract epithelial cells and fibroblasts to wound sites;
- Accelerate the recovery of damaged neural tissue
- Reduce edema;
- Increase blood flow;
- Inhibit pathogenesis.

Electrostimulation refers to the application of electrical current through electrodes placed directly on the skin near the wound. The types of electrostimulation and devices can be categorized into groups based on the type of current. This includes low-intensity direct current, high-voltage pulsed current, alternating current, and transcutaneous electrical nerve stimulation.

Electromagnetic Therapy
Electromagnetic therapy is a related but distinct form of treatment that involves the application of electromagnetic fields, rather than direct electrical current.

Regulatory Status
No electrostimulation or electromagnetic therapy devices have received approval from the U.S. Food and Drug Administration specifically for the treatment of wound healing. A number of devices have been cleared for marketing for other indications. Use of these devices for wound healing is off-label.

For individuals who have any wound type (acute or nonhealing) who receive electrostimulation, the evidence includes systematic reviews and randomized controlled trials (RCTs). Relevant outcomes are symptoms, change in health status, morbid events, quality of life, and treatment-related morbidity. Systematic reviews of RCTs on electrical stimulation have reported improvements in some outcomes, mainly intermediate outcomes such as a decrease in wound size and/or the speed of wound healing. There are few analyses of the more important clinical outcomes of complete healing and the time to complete healing, and many of the trials are relatively low quality. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

For individuals who have any wound type (acute or nonhealing) who receive electromagnetic therapy, the evidence includes 2 systematic reviews of RCTs (1 on pressure ulcers and the other on leg ulcers) and an RCT of electromagnetic treatment following Cesarean section. Relevant outcomes are symptoms, change in health status, morbid events, quality of life, and treatment-related morbidity. The systematic reviews identified a few RCTs with small sample sizes that do not permit drawing definitive conclusions. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

CODING

Commercial Products

The following HCPCS code(s) are not medically necessary:

G0281 Electrical stimulation, (unattended), to one or more areas, for chronic Stage III and Stage IV pressure ulcers, arterial ulcers, diabetic ulcers, and venous stasis ulcers not demonstrating measurable signs of healing after 30 days of conventional care, as part of a therapy plan of care

G0282 Electrical stimulation, (unattended), to one or more areas, for wound care other than described in G0281

G0295 Electromagnetic therapy, to one or more areas, for wound care other than described in G0329 or for other uses

G0329 Electromagnetic therapy, to one or more areas for chronic Stage III and Stage IV pressure ulcers, arterial ulcers, diabetic ulcers and venous stasis ulcers not demonstrating measurable signs of healing after 30 days of conventional care as part of a therapy plan of care

The following HCPCS code(s) are not separately reimbursed:

E0761 Nonthermal pulsed high frequency radiowaves, high peak power electromagnetic energy treatment device

E0769 Electrical stimulation or electromagnetic wound treatment device, not otherwise classified.

RELATED POLICIES

Medicare Advantage Plans National and Local Coverage Determinations
Non-Reimbursable Health Service Codes

PUBLISHED

Provider Update, April 2025
Provider Update, April 2024
Provider Update, April 2023
Provider Update, April 2022
Provider Update, March 2021

REFERENCES

1. Centers for Medicare & Medicaid Services (CMS). National Coverage Determination (NCD) for Electrical Stimulation (ES) and Electromagnetic Therapy for the Treatment of Wounds (270.1). 2004; https://www.cms.gov/medicare-coverage-database/details/ncd-details.aspx?ncdid=131&ver=3. Accessed November 29, 2024.
2. Barnes R, Shahin Y, Gohil R, et al. Electrical stimulation vs. standard care for chronic ulcer healing: a systematic review and meta-analysis of randomised controlled trials. Eur J Clin Invest. Apr 2014; 44(4): 429-40. PMID 24456185
3. Franek A, Kostur R, Polak A, et al. Using high-voltage electrical stimulation in the treatment of recalcitrant pressure ulcers: results of a randomized, controlled clinical study. Ostomy Wound Manage. Mar 2012; 58(3): 30-44. PMID 22391955
4. Houghton PE, Campbell KE, Fraser CH, et al. Electrical stimulation therapy increases rate of healing of pressure ulcers in community-dwelling people with spinal cord injury. Arch Phys Med Rehabil. May 2010; 91(5): 669-78. PMID 20434602
5. Kawasaki L, Mushahwar VK, Ho C, et al. The mechanisms and evidence of efficacy of electrical stimulation for healing of pressure ulcer: a systematic review. Wound Repair Regen. 2014; 22(2): 161-73. PMID 24372691
6. Lala D, Spaulding SJ, Burke SM, et al. Electrical stimulation therapy for the treatment of pressure ulcers in individuals with spinal cord injury: a systematic review and meta-analysis. Int Wound J. Dec 2016; 13(6): 1214-1226. PMID 25869151
7. Liu LQ, Moody J, Traynor M, et al. A systematic review of electrical stimulation for pressure ulcer prevention and treatment inpeople with spinal cord injuries. J Spinal Cord Med. Nov 2014; 37(6): 703-18. PMID 24969965
8. Thakral G, La Fontaine J, Kim P, et al. Treatment options for venous leg ulcers: effectiveness of vascular surgery, bioengineered tissue, and electrical stimulation. Adv Skin Wound Care. Apr 2015; 28(4): 164-72. PMID 25775200
9. Zheng Y, Du X, Yin L, et al. Effect of electrical stimulation on patients with diabetes-related ulcers: a systematic review and meta-analysis. BMC Endocr Disord. Apr 27 2022; 22(1): 112. PMID 35477391
10. Arora M, Harvey LA, Glinsky JV, et al. Electrical stimulation for treating pressure ulcers. Cochrane Database Syst Rev. Jan 222020; 1(1): CD012196. PMID 31962369
11. Girgis B, Duarte JA. High Voltage Monophasic Pulsed Current (HVMPC) for stage II-IV pressure ulcer healing. A systematic review and meta-analysis. J Tissue Viability. Nov 2018; 27(4): 274-284. PMID 30177421
12. Khouri C, Kotzki S, Roustit M, et al. Hierarchical evaluation of electrical stimulation protocols for chronic wound healing: An effect size meta-analysis. Wound Repair Regen. Sep 2017; 25(5): 883-891. PMID 29052946
13. Aziz Z, Flemming K. Electromagnetic therapy for treating pressure ulcers. Cochrane Database Syst Rev. Dec 12 2012; 12:CD002930. PMID 23235593
14. Aziz Z, Cullum N. Electromagnetic therapy for treating venous leg ulcers. Cochrane Database Syst Rev. Jul 02 2015; 2015(7):CD002933. PMID 26134172
15. Khooshideh M, Latifi Rostami SS, Sheikh M, et al. Pulsed Electromagnetic Fields for Postsurgical Pain Management in Women Undergoing Cesarean Section: A Randomized, Double-Blind, Placebo-controlled Trial. Clin J Pain. Feb 2017; 33(2): 142-147.PMID 28060214
16. Qaseem A, Humphrey LL, Forciea MA, et al. Treatment of pressure ulcers: a clinical practice guideline from the American College of Physicians. Ann Intern Med. Mar 03 2015; 162(5): 370-9. PMID 25732279
17. American College of Physicians (ACP). Inactive ACP guidelines. https://www.acponline.org/clinical-information/guidelines/inactive-acp-guidelines. Accessed November 22, 2024.

18. Bolton LL, Girolami S, Corbett L, et al. The Association for the Advancement of Wound Care (AAWC) venous and pressure ulcer guidelines. Ostomy Wound Manage. Nov 2014; 60(11): 24-66. PMID 25380098
19. Association for the Advancement of Wound Care (AAWC). Association for the Advancement of Wound Care guideline of pressure ulcer guidelines. Malvern, PA: AAWC; 2010.
20. Wound, Ostomy and Continence Nurses Society-Wound Guidelines Task Force. WOCN 2016 Guideline for Prevention and Management of Pressure Injuries (Ulcers): An Executive Summary. J Wound Ostomy Continence Nurs. 2017; 44(3): 241-246.PMID 28472816
21. Bonham PA, Droste LR, González A, et al. 2024 Guideline for Management of Wounds in Patients With Lower Extremity Arterial Disease: An Executive Summary. J Wound Ostomy Continence Nurs. Sep-Oct 2024; 51(5): 357-370. PMID 39313970