# Electromagnetic Therapy for Wounds

**Policy Number**: DME 029.24
**Effective Date**: February 1, 2024

Instructions for Use

**Table of Contents** **Page**



**Related Policies**

- Electrical Stimulation for the Treatment of Pain and Muscle Rehabilitation
- Durable Medical Equipment, Orthotics, Medical Supplies, and Repairs/Replacements

## Coverage Rationale

**Electromagnetic therapy is unproven and not medically necessary due to insufficient evidence of efficacy for treating wounds or ulcers including but not limited to:**

- Arterial ulcers
- Chronic pressure ulcers
- Diabetic foot ulcers
- Soft tissue injuries
- Venous stasis ulcers

## Applicable Codes

The following list(s) of procedure and/or diagnosis codes is provided for reference purposes only and may not be all inclusive. Listing of a code in this policy does not imply that the service described by the code is a covered or non-covered health service. Benefit coverage for health services is determined by the member specific benefit plan document and applicable laws that may require coverage for a specific service. The inclusion of a code does not imply any right to reimbursement or guarantee claim payment. Other Policies may apply.

| HCPCS Code | Description |
|---|---|
| E0769 | Electrical stimulation or electromagnetic wound treatment device, not otherwise classified |
| 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 |

## Description of Services

Electromagnetic therapy refers to the application of electromagnetic fields to the wound area, rather than direct application of electrical current. This procedure is also referred to as pulsed electromagnetic induction (PEMI), pulsed electromagnetic field (PEMF), and pulsed electromagnetic therapy. (ECRI, 2018)

## Clinical Evidence

There is limited evidence in the published scientific literature to support the use of electromagnetic therapy (EMT) for treating chronic wounds and ulcers. The data from clinical trials are insufficient to prove efficacy or to evaluate the effects of this therapy compared with other treatment options.

A Cochrane Database systematic review was conducted to assess the effects of EMT on the healing of venous leg ulcers (Aziz and Cullum, 2015). Three randomized controlled trials comparing EMT with sham-EMT or other treatments, involving 94 individuals, were included. At day 50, 2/10 (20%) venous ulcers were healed in the EMT group compared with 2/9 (22%) in the sham-EMT group. Assessment at 90 days found that 12/18 (67%) ulcers had healed in the EMT group compared with 6/19 (32%) in the sham group. No trials reported any evaluation of the precision of the reduction in wound size (change from baseline). Quality of life using a validated scale was not measured in any of the studies. At the end of the study, pain was reported to be lower in both the EMT and sham-EMT groups but the difference between the groups was not significant. The authors concluded that there is no high-quality evidence about whether EMT speeds the healing of venous leg ulcers, and its effect is unclear. They recommend methodologically sound and robust RCTs are needed in order to investigate further any effect of using EMT to improve venous leg ulcer healing. There were several study limitations. This is a small study which did not conduct an intention to treat analysis. The methods for handling missing data in the trials varied and there was missing data in each arm. Another concern was that two of the studies were sponsored by the manufacturer of the electromagnetic devices.

In a Cochrane systematic review (Aziz and Bell-Syer, 2015) the effects of EMT on the healing of pressure ulcers was assessed. This review involved 60 participants and included two randomised controlled trials comparing the use of EMT with sham EMT, no EMT or treatments considered to be standard of care. One trial reported 17/20 (85%) ulcers in the EMT group achieved complete healing within the duration of treatment when compared with no ulcers healing in either of the other two groups. The reported risk ratio (RR) was 10.00 (95% CI 0.70 to 143.06). The authors reported findings between both groups were statistically not significant. The second trial reported 3/10 (30%) Stage II pressure ulcers and 3/5 (60%) Stage III ulcers in the EMT group healed in comparison to none in the sham EMT group. The pooled RR for Stage II and III was 7.00 (95% CI 0.97 to 50.38). The authors concluded the reported results of these two studies did not indicate healing of pressure ulcers was statistically significant when treated with EMT. No secondary outcomes including costs, quality of life, pain and acceptability of treatment were assessed in either trial. The authors further reported these two trials did not include strong evidence to support EMT speeds pressure healing. The trials included small numbers of participants and different regimens of treatment over different time scales. They added further trials comparing EMT with sham therapy, or standard of care, are needed to establish whether or not EMT improves the healing of pressure ulcers. They reported several study limitations including unclear risk of bias for blinding. While allocation to treatment groups was identified as randomised there was no clear description on how the randomisation was accomplished and outcome data was incomplete.

Kwan et al. (2015) performed prospective, randomized, double-blind controlled study to examine the effectiveness of pulsed electromagnetic field (PEMF) therapy in the management of diabetic foot ulcers (DFUs), as compared with a control group. The study included 13 individuals- (7 in the PEMF group and 6 in the control group) diagnosed with type 2 diabetes and unsatisfactory healing of ulcer(s) in the preceding 4 weeks. Participants were randomly allocated to receive either active PEMF therapy (duration: 60 minutes; frequency: 12 Hz; intensity: 12 Gauss) or nonactive PEMF for 14 sessions within 3 weeks. Assessment on wound closure, wound depth, and microcirculation were performed at the baseline, end of the treatment period, and 1-month follow-up. At the posttreatment evaluation, the PEMF group demonstrated an 18% decrease, and the control group showed a 4% decrease over time. At the 1-month follow-up, the average wound size of the PEMF group decreased by 35%. The control group followed a similar trend. By the end of the treatment period, there was an 18% decrease in wound size in the active PEMF group as compared with a 10% decrease in the control group. The PEMF group demonstrated an increase in cutaneous capillary blood velocity (by 28%) and 14% increase in capillary diameter. The control group showed a decrease in both capillary blood velocity and diameter. The authors concluded that PEMF seems to produce a favorable

influence on accelerating wound closure, decreasing wound depth, and increasing microcirculation. Limitations of this study include the small sample size and the different location on the feet of the ulcers which could affect the treatment outcome.

### Clinical Practice Guidelines

#### *International Working Group on the Diabetic Foot (IWGDF)*

The International Working Group on the Diabetic Foot (IWGDF) conducted a systematic review which identified six studies investigating the use of electrical or electromagnetic stimulation for diabetic ulcers of the foot. The analysis of the studies provided limited evidence to suggest these therapies might be beneficial in improving outcomes. The effects on wound healing were small and in no significant differences were noted when compared to the standard of care. IWGDF 2023 Wound Healing Guideline does not currently recommend the use of electromagnetic stimulation for diabetes related full ulcer management. (Chen et al., 2023)

## U.S. Food and Drug Administration (FDA)

This section is to be used for informational purposes only. FDA approval alone is not a basis for coverage.

The FDA has not approved any electromagnetic devices specifically for the treatment of chronic wounds. Use of these devices for wound healing is an off-label indication.

For additional information search Product Code ILX at: https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfPMN/pmn.cfm. (Accessed September 28, 2023)

## References


The foregoing Oxford policy has been adapted from an existing UnitedHealthcare national policy that was researched, developed and approved by UnitedHealthcare Medical Technology Assessment Committee. [2023T0527Q]

Aziz Z, Bell-Syer SE. Electromagnetic therapy for treating pressure ulcers. Cochrane Database Syst Rev. 2015 Sep 3;2015(9):CD002930.

Aziz Z, Cullum N. Electromagnetic therapy for treating venous leg ulcers. Cochrane Database Syst Rev. Jul 2, 2015; 7:CD002933.

Chen P, Vilorio NC, Dhatariya K, et al. Guidelines on interventions to enhance healing of foot ulcers in people with diabetes (IWGDF 2023 update). Diabetes Metab Res Rev. 2023 May 25:e3644.

ECRI Institute. Electrical Stimulation and Electromagnetic Therapy for Chronic Wounds. Plymouth Meeting (PA): ECRI Institute; 2018 Apr 27. (Custom Rapid Responses).

Kwan RL, Wong WC, Yip SL, et al. Pulsed electromagnetic field therapy promotes healing and microcirculation of chronic diabetic foot ulcers: a pilot study. Adv Skin Wound Care. 2015 May;28(5):212-9.


## Policy History/Revision Information

| Date | Summary of Changes |
|---|---|
| 02/01/2024 | **Definitions**<br>• Removed definition of “Pressure Ulcer Staging”<br>**Supporting Information**<br>• Updated *Clinical Evidence*, *FDA*, and *References* sections to reflect the most current information<br>• Archived previous policy version DME 029.23 |

# Instructions for Use

This Clinical Policy provides assistance in interpreting UnitedHealthcare Oxford standard benefit plans. When deciding coverage, the member specific benefit plan document must be referenced as the terms of the member specific benefit plan may differ from the standard plan. In the event of a conflict, the member specific benefit plan document governs. Before using this policy, please check the member specific benefit plan document and any applicable federal or state mandates. UnitedHealthcare Oxford reserves the right to modify its Policies as necessary. This Clinical Policy is provided for informational purposes. It does not constitute medical advice.

The term Oxford includes Oxford Health Plans, LLC and all of its subsidiaries as appropriate for these policies. Unless otherwise stated, Oxford policies do not apply to Medicare Advantage members.

UnitedHealthcare may also use tools developed by third parties, such as the InterQual® criteria, to assist us in administering health benefits. UnitedHealthcare Oxford Clinical Policies are intended to be used in connection with the independent professional medical judgment of a qualified health care provider and do not constitute the practice of medicine or medical advice.