

Subject: Biomagnetic Therapy
Document #: ANC.00006
Status: Revised

Publish Date: 06/28/2024
Last Review Date: 05/09/2023

Description/Scope

This document addresses the use of static (not electrically charged) magnetic fields as a method to relieve pain and treat other health issues. Biomagnetic therapy consists of placing a magnet on or near the skin, using a variety of devices including, but not limited to: bracelets, necklaces, insoles, sleeves, head bands, or mattress pads. It may also be referred to as magnetic therapy, magnotherapy, magnotherapy, static magnetic field therapy, or therapeutic magnets.

Note: This document does not address transcranial magnetic stimulation (TMS). For criteria relating to TMS, please see the applicable guidelines used by the plan.

Position Statement

Investigational and Not Medically Necessary:

Biomagnetic therapy is considered **investigational and not medically necessary** for all indications.

Rationale

Randomized studies have not demonstrated significant beneficial effects from magnetic therapy in treating a variety of conditions. In one such study, Cepeda and colleagues (2007) evaluated the use of magnetic therapy on postoperative pain in a randomized, double-blind, controlled trial. A total of 165 participants were randomized to either sham therapy or magnetic therapy upon reporting moderate to severe pain in a post anesthesia unit. Sham or commercially available magnets were placed over the surgical incision site for 2 hours. Study participants rated their pain on a scale of 0-10. Pain was rated similarly in both groups, but the active magnet group required more morphine than the sham magnet group. The authors concluded that magnetic therapy lacks efficacy and should not be recommended for acute pain relief.

Colbert and colleagues (2010) collected data on the effectiveness of magnetic therapy for carpal tunnel syndrome in a randomized, double-blind, sham-controlled feasibility study. Participants (n=60) were recruited from the general population and nightly wore either a magnetic or a nonmagnetic disc. Primary outcome measures included a symptom severity scale and a function severity scale of the Boston Carpal Tunnel Questionnaire and four median nerve parameters. Study results indicated that participants in the active magnet group and the control group experienced some improvement after 6 weeks of treatment, but no significant between-group differences in outcome measures were demonstrated.

A Cochrane review (Kroeling, 2013) evaluated the effectiveness of therapies, one of which was permanent magnets (necklaces), as a treatment for neck pain. The authors noted the quality of evidence found was low and further study appeared to be needed. Conclusions included that for individuals with chronic neck pain, magnetic necklaces were no more effective in providing relief than placebo. Similarly, in another Cochrane review conducted by Cheong and colleagues (2014) on nonsurgical interventional approaches to treat pelvic pain, authors concluded that, "No difference in pain levels was observed when magnetic therapy was compared with use of a control magnet." The quality of evidence for magnetic therapy as a treatment for pelvic pain was considered to be very low.

The National Center for Complementary and Integrative Health provides information on magnets for pain relief (2023). The fact sheet notes, although widely marketed, "research studies do not conclusively support the use of static magnets for pain relief."

Kamm and colleagues (2019) in a randomized, single-blind and placebo-controlled study, investigated the influence of static magnetic field exposure on sensory and pain (pin-prick, pressure and heat) perception with 18 healthy volunteers. Participants were aware that different field strengths would be used but were blinded to the actual field strength used on a specific day. The individuals underwent three 10-minute static magnetic field exposures using field strengths of 0 T (placebo), 1.5 T, and 3 T within clinical MR scanners in randomized order on 3 separate days. Experimental sensory and pain testing was performed immediately before and after each magnetic field exposure. The results showed there was no significant effect of field strength on the assessed experimental sensory and pain testing parameters (mechanical detection threshold, pin-prick threshold, pressure pain threshold, heat pain threshold and suprathreshold heat pain rating). Study results found no evidence that a 10-minute 1.5 T or 3 T static magnetic field exposure affects experimental sensory or pain perception in young healthy volunteers.

Fan and colleagues (2021) collected data from 30 scientific studies that investigated the effects of static magnetic fields on pain relief in humans or mice. The data were extracted by two investigators and the standardized mean difference (SMD) and 95 percent confidence intervals (CIs) were calculated by inverse variance methods, using standard meta-analysis software. The results showed the investigators found 64 percent of the human studies (n=22) and 100 percent of the mice studies (n=6) showed positive analgesic effects of static magnetic fields. While most of the reported studies indicated that static magnetic fields could have positive effects, there were also studies that did not observe positive analgesic effects from static magnetic fields. Meta-analysis was performed for the seven trials that assessed the analgesic effect of static magnetic fields by pain score. The pooled estimate of the effect between static magnetic field treatment and the placebo control had marginal significance (SMD = -0.39; 95% CI = -0.78 to -0.00; $I^2 = 78\%$), which suggested to the investigators that static magnetic field treatment does have moderate pain relief effect. Although the investigators indicated that the studies about the analgesic effects of static magnetic fields are not definite, and there is no direct evidence of the efficacy of static magnetic fields for pain relief, they reveal that some of the studies reviewed support the application of static magnetic fields in pain relief. However, it was indicated that further investigation is warranted in the future to determine if static magnetic fields could be used as an alternative or addition to a pain management program. The investigators further concluded that human body clinical trials are insufficient, and the few available studies do not have satisfactory results. The authors concluded that the reasons for the unsatisfactory results may be due to improper static magnetic field parameters and inadequate treatment time, or the types of pain reported (Fan, 2021).

In summary, there is insufficient credible scientific evidence published in recognized peer-reviewed medical literature permitting conclusion that biomagnetic therapy relieves pain or influences the course of any disease or condition. The published literature does

not validate the clinical role of this treatment methodology, or demonstrate that biomagnetic therapy materially improves net health outcomes.

Background/Overview

Biomagnetic therapy is a proposed approach to analgesia that utilizes the non-invasive application of static magnets to create an electromagnetic field to areas of musculoskeletal damage or perceived discomfort. The use of magnets as therapeutic agents has existed since antiquity and remains a medical fixture in many cultures.

Clinically, biomagnetic therapy is reported to lessen the discomfort arising from a variety of degenerative joint conditions, such as osteoarthritis and aid in the recovery of joint and tendon injury. However, these claims are not paired with in situ or laboratory examinations of the affected anatomy following therapy. Though the precise physiological mechanism remains elusive, proponents of biomagnetic therapy attribute its recuperative effects to an unspecified up-regulation of cellular functions. Further ambiguity stems from the fact that the reported efficacy of this treatment is based largely on the subjective experiences of individuals participating in clinical trials that admittedly display a significant placebo effect and investigator bias.

The effectiveness of biomagnetic therapy for relieving pain is still in question. The treatment is generally considered harmless unless it causes an individual to forego other needed medical treatments.

Definitions

Analgesia: Absence of normal sense of pain.

Biomagnetic Therapy (may also be known as magnetic therapy, magnotherapy, magnotherapy, static magnetic field therapy, or therapeutic magnets): The application of magnets for the treatment of a health condition.

Magnet: A material or object that produces a magnetic field that attracts other ferromagnetic materials, such as iron.

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 are Investigational and Not Medically Necessary:

When the code describes a procedure indicated in the Position Statement section as investigational and not medically necessary.

CPT

97799 Unlisted physical medicine/rehabilitation service or procedure [when specified as biomagnetic therapy]

HCPCS

No specific code for magnets for biomagnetic therapy

ICD-10 Diagnosis

All diagnoses

References

Peer Reviewed Publications:

1. Arabloo J, Hamouzadeh P, Eftekhariadeh F, et al. Health technology assessment of magnet therapy for relieving pain. *Med J Islam Repub Iran*. 2017; 31:31.
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4. Colbert AP, Markov MS, Carlson N, et al. Static magnetic field therapy for carpal tunnel syndrome: a feasibility study. *Arch Phys Med Rehabil*. 2010; 91(7):1098-1104.
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8. Pittler MH, Brown, EM, Ernst E. Static magnets for reducing pain: systematic review and meta-analysis of randomized trials. *CMAJ*. 2007; 177(7):736-742.
9. Richmond SJ, Brown SR, Campion PD, et al. Therapeutic effects of magnetic and copper bracelets in osteoarthritis: a randomised placebo-controlled crossover trial. *Complement Ther Med*. 2009; 17(5-6):249-256.
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11. Winemiller MH, Billow RG, Laskowski ER, et al. Effect of magnetic vs. sham-magnetic insoles on plantar heel pain. *JAMA*. 2003; 290(11):1474-1478.
12. Wolsko PM, Eisenberg DM, Simon LS, et al. Double-blind placebo-controlled trial of static magnets for the treatment of osteoarthritis of the knee: results of a pilot study. *Alternative Therapies*. 2004; 10(2):36-43.

Government Agency, Medical Society, and Other Authoritative Publications:

1. Cheong YC, Smotra G, Williams AC. Non-surgical interventions for the management of chronic pelvic pain. *Cochrane Database Syst Rev*. 2014; (3):CD008797.
2. Kroeling P, Gross A, Graham N, et al. Electrotherapy for neck pain. *Cochrane Database Syst Rev*. 2013; (8):CD004251.

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Document History

| Status | Date | Action | |
|---------------------------------|------------------|---|---------------------|
| Revised | 05/09/2024 | Medical Policy & Technology Assessment Committee (MPTAC) review. Revised INV and NMN statement. Revised Description/Scope, Rationale, and Background sections. Deleted Websites section. | |
| Reviewed | 05/11/2023 | MPTAC review. Updated Description/Scope, References, and Websites sections. | |
| Reviewed | 05/12/2022 | MPTAC review. Updated Rationale, References and Websites sections. | |
| Reviewed | 05/13/2021 | MPTAC review. Updated Rationale, References and Websites sections. | |
| Reviewed | 05/14/2020 | MPTAC review. Updated Description/Scope and Websites sections. | |
| Reviewed | 06/06/2019 | MPTAC review. Updated References and Websites sections. | |
| Reviewed | 07/26/2018 | MPTAC review. Updated References and Websites sections. | |
| | 05/15/2018 | The document header wording updated from “Current Effective Date” to “Publish Date.” | |
| Reviewed | 08/03/2017 | MPTAC review. Updated Rationale and References sections. | |
| Reviewed | 08/04/2016 | MPTAC review. References and Websites sections updated. Removed ICD-9 codes from Coding section. | |
| Reviewed | 08/06/2015 | MPTAC review. Rationale and References sections updated. Website section added. | |
| Reviewed | 08/14/2014 | MPTAC review. Description and References sections updated. | |
| Reviewed | 08/08/2013 | MPTAC review. Description (note) and Rationale sections updated. | |
| Reviewed | 08/09/2012 | MPTAC review. Description (note), Background and Index sections updated. | |
| Reviewed | 08/18/2011 | MPTAC review. Description, Rationale, Definition, References, and Index sections updated. | |
| Reviewed | 08/19/2010 | MPTAC review. Description, rationale, background and references updated. | |
| Reviewed | 08/27/2009 | MPTAC review. Updated References section. | |
| Reviewed | 08/28/2008 | MPTAC review. | |
| | 02/21/2008 | The phrase "investigational/not medically necessary" was clarified to read "investigational and not medically necessary." This change was approved at the November 29, MPTAC meeting. | |
| Reviewed | 08/23/2007 | MPTAC review. Updated References and Index sections. | |
| Reviewed | 09/14/2006 | MPTAC review. Added reference to: BEH.00002 Transcranial Magnetic Stimulation as a Treatment of Depression and Other Psychiatric Disorders; SURG.00010 Treatment of Urinary Incontinence, Urinary Retention and Sacral Nerve Stimulation; and MED.00046 Electrical Stimulation and Electromagnetic Therapy for Wound Healing. | |
| Revised | 09/22/2005 | MPTAC review. Revision based on Pre-merger Anthem and Pre-merger WellPoint Harmonization. | |
| | | | |
| Pre-Merger Organizations | Last Review Date | Document Number | Title |
| Anthem, Inc. | 07/27/2004 | ANC.00006 | Biomagnetic Therapy |
| WellPoint Health Networks, Inc. | | None | |

Applicable to Commercial HMO members in California: When a medical policy states a procedure or treatment is investigational, PMGs should not approve or deny the request. Instead, please fax the request to Anthem Blue Cross Grievance and Appeals at fax # 818-234-2767 or 818-234-3824. For questions, call G&A at 1-800-365-0609 and ask to speak with the Investigational Review Nurse.

Federal and State law, as well as contract language, including definitions and specific contract provisions/exclusions, take precedence over Medical Policy and must be considered first in determining eligibility for coverage. The member's contract benefits in effect on the date that services are rendered must be used. Medical Policy, which addresses medical efficacy, should be considered before utilizing medical opinion in adjudication. Medical technology is constantly evolving, and we reserve the right to review and update Medical Policy periodically.

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