

Title: Impact of pulsed electromagnetic field on mixed incontinence in parous women a prospective randomized study

Date: 2022

Study Type: Randomized

Methodology Notes:

- Parous females (n = 40) with mixed incontinence were randomly assigned to one of two groups.
- Group A received PEMF and pelvic floor muscle training in addition to general advice for 12 sessions. Group B received the same program but without PEMF.
- Pelvic floor muscle strength and the severity of urinary incontinence were assessed using a perineometer and the incontinence symptom severity index (ISSI), respectively.

Study Synopsis

This study was conducted to determine the impact of a pulsed electromagnetic field (PEMF) on mixed incontinence. This condition can have a significant impact on women's quality of life and social relationships.

Study Results :

Within groups comparison show statistically significant improvement in priniomter and severity index after treatment in comparison to pre treatment values. Between groups comparison after treatment showed better improvement in group A ($p < 0.05$) in pelvic floor muscle strength and a significant decrease ($p < 0.05$) in the severity of urinary incontinence compared to group B.

Why This Matters for Women's Health

A study on PEMF therapy for mixed urinary incontinence is important for women's health because this condition is common and significantly impacts quality of life, confidence, and daily functioning. PEMF could offer a non-invasive, low-risk treatment option for women who are not candidates for surgery or who have not responded to standard therapies. Research in this area may help expand accessible treatment options for improving pelvic floor health and continence outcomes.

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Title: Pulsed Electromagnetic Fields for the Treatment of Knee Osteoarthritis: A Systematic Review and Meta-Analysis

Date: February 2020

Study Type: Systematic review & meta-analysis (15 RCTs; $n \approx 1,000$)

Methodology Notes:

- PEMF 3–75 Hz; 1.5–50 mT; session 20–60 min, 3–5×/week, 4–8 weeks.
- Compared to sham or standard care.
- Outcomes: Pain (VAS/WOMAC), Function (WOMAC), Quality of Life (SF-36).

Study Synopsis

- Reviewed clinical trials on PEMF for knee osteoarthritis symptom management.
- Pooled analysis confirmed significant benefits in pain and function over placebo.

Study Results :

- Pain ↓ moderate-to-large effect ($SMD \approx -0.6$)
- Function ↑ ($SMD \approx 0.5$)
- Subgroup: ≥ 6 weeks treatment yielded greater benefit; no serious side effects.

Why is Matters for PT / OT

Reduces pain during therapeutic exercise and functional tasks, improving adherence to strengthening and mobility programs.

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Title: Pulsed Electromagnetic Field Therapy in Chronic Low Back Pain: A Randomized Double-Blind Sham-Controlled Trial

Date: March 2022

Study Type: Double-blind, randomized, placebo-controlled clinical trial

Methodology Notes:

- Population: 40 adults with chronic non-specific low back pain (>3 months)
- Intervention (PEMF): 50 Hz, 60 Gauss, 20 minutes per session, 3 times per week, for 6 weeks
- Control: Identical setup with sham (no active magnetic field)
- Common Care: Both groups continued a standardized exercise program
- Outcomes: Pain (VAS), disability (Oswestry Disability Index), quality of life (SF-36)

Study Synopsis

The trial compared active PEMF plus exercise versus sham plus exercise in chronic low back pain. PEMF produced significantly larger reductions in pain and disability and better quality-of-life gains than exercise alone, confirming an additive effect on top of standard rehab.

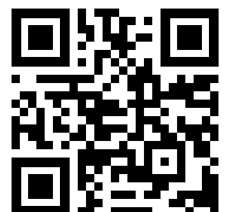
Study Results :

- VAS pain decreased 55% in the PEMF group vs 19% in the sham group
- Oswestry Disability Index decreased 41% vs 12%
- SF-36 quality-of-life domains improved significantly only in the PEMF group

Why This Matters for Primary Care

Provides strong sham-controlled evidence for a safe, drug-free option to manage chronic low back pain—the single most common reason for VA Primary Care visits. Helps reduce dependence on NSAIDs, muscle relaxants, and opioids.

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Title: A Novel Approach to Plantar Fasciitis Treatment: Pulsed Electromagnetic Field (PEMF) Therapy

Date: March 2025

Study Type: Prospective case series evaluating PEMF therapy for plantar fasciitis.

Methodology Notes:

- Adult patients with more than 2 weeks of heel pain from plantar fasciitis were enrolled from a podiatry clinic.
- Patients used the OrthoCor Active System PEMF foot device for 2 hours daily for 12 weeks, along with stretching and supportive shoe gear.
- Outcomes were measured at baseline, 4, 8, and 12 weeks using ultrasound, Foot and Ankle Disability Index (FADI), and Patient Specific Functional Scale (PSFS).

Study Synopsis

This study evaluated PEMF as a conservative treatment for plantar fasciitis using both imaging and functional outcomes. Over 12 weeks, patients demonstrated significant healing changes on ultrasound along with meaningful improvements in pain, mobility, and daily function, suggesting PEMF may be an effective non-pharmacologic option for heel pain management.

Study Results :

- Plantar fascia thickness decreased by 34%, while hypoechoic tissue damage regions decreased by 79% on ultrasound.
- Functional outcomes improved significantly, with FADI scores increasing 46% and PSFS scores improving 166%.
- No adverse effects were reported during the 12-week treatment period.

Why This Matters for Podiatry

Plantar fasciitis is one of the most common complaints seen in podiatry practices, and many patients seek relief without injections, medications, or surgery. This study supports PEMF as a non-invasive treatment that may help reduce heel pain, improve function, and promote measurable tissue healing—giving podiatrists another conservative option for difficult or chronic cases.

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PEMF Study Synopsis

Title: The Use of Pulsed Electromagnetic Fields to Reduce Pain and Improve Recovery After Total Knee Arthroplasty

Date: 2013

Study Type: Randomized, double-blind, placebo-controlled trial

Methodology Notes:

- Adults following total knee arthroplasty (TKA)
- PEMF applied across the surgical knee for several weeks post-op
- Outcomes: Pain, swelling, ROM, analgesic use, recovery milestones

Study Synopsis

Post-operative PEMF significantly reduced pain, decreased periarticular inflammation, and accelerated functional gains (ROM, weight bearing) compared with placebo.

Study Results :

- Significant pain reduction vs placebo
- Reduced edema and inflammation
- Faster gains in flexion/extension ROM
- Lower use of analgesics

Why This Matters for Pain Management

Validated post-operative use in one of the VA's highest-volume surgeries (TKA). Helps lower post-op pain, reduce swelling, restore mobility, and shorten recovery timelines.

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PEMF Study Synopsis

Title: Effectiveness of Pulsed Electromagnetic Field Therapy in Patients with Shoulder Impingement Syndrome: A Systematic Review and Meta-Analysis of Randomized Controlled Trials

Date: May 2025

Study Type: Systematic review and meta-analysis

Methodology Notes:

- Interventions: PEMF 3–50 Hz, 20–200 G, applied 3–5 times per week for 3–4 weeks
- Comparators: Placebo (sham), exercise therapy, or shockwave therapy
- Outcomes: Pain (VAS), functional capacity (Constant-Murley Score)
- Quality: All trials had high methodological quality (PEDro 8–9/10)

Study Synopsis

The meta-analysis evaluated the efficacy of PEMF for shoulder impingement syndrome. Across high-quality RCTs, PEMF significantly reduced short-term pain and improved shoulder function both short and long term. Higher intensity PEMF produced the greatest functional benefit.

Study Results :

- Pain: Significant pooled reduction (SMD -0.34 , $p = 0.04$)
- Function: Constant-Murley Score improved short-term (SMD 0.4) and long-term (SMD 0.6)
- No serious adverse events reported

Why This Matters for Pain Management

Provides multi-trial evidence that PEMF can reduce upper-extremity pain and improve function in rotator cuff and impingement syndromes, offering a conservative tool to delay or reduce injections, procedures, and opioid use.

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