



2009 Harvard Medical School study assessing PEMF in the medical management of osteoarthritis of the knee.

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Effectiveness of pulsed electromagnetic field therapy in the management of osteoarthritis of the knee: a meta-analysis of randomized controlled trials.

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Abstract

OBJECTIVE:

To assess the effectiveness of pulsed electromagnetic fields compared with placebo in the management of osteoarthritis of the knee.

DATA SOURCES:

A systematic review of PubMed, EMBASE, and the Cochrane Controlled Trials Register.

METHODS:

Randomized, controlled trials reporting on the blinded comparison of pulsed electromagnetic fields with placebo were included. Validity was tested according to the Jadad Scale. Studies were pooled using fixed-effects and random-effects models after exclusion of publication bias and assessment of heterogeneity. Sensitivity analyses and meta-regression were performed to test the stability of our findings.

RESULTS:

Nine studies, including 483 patients, were pooled. No significant difference could be shown for pain (weighted mean difference 0.2 patients; 95% confidence interval (CI): -0.4 to 0.8) or stiffness (weighted mean difference 0.3; 95% CI: -0.3 to 0.9). There was a significant effect on activities of daily living (weighted mean difference 0.8; 95% CI 0.2-1.4, $p = 0.014$) and scores (standardized mean difference 0.4; 95% CI: 0.05-0.8, $p = 0.029$). We saw only statistically insignificant differences between studies with different treatment protocols.

CONCLUSION:

Pulsed electromagnetic fields improve clinical scores and function in patients with osteoarthritis of the knee and should be considered as adjuvant therapies in their management. There is still equipoise of evidence for an effect on pain in the current literature.