



Review J Biol Regul Homeost Agents. 2018 Nov-Dec;32(6 Suppl. 1):23-28.

Biophysical stimulation of the knee with PEMFs: from bench to bedside

G Vicenti ¹, D Bizzoca ¹, V S Nappi ¹, F Moretti ², M Carrozzo ¹, V Belviso ¹, B Moretti ¹

Affiliations

PMID: 30644277

Abstract

Clinical biophysics investigates the relationship between non-ionizing physical energy and the human body. Although several types of electrical stimulation devices have received US FDA approval for orthopaedic application, the use of Pulsed Electromagnetic Field (PEMFs) play a central role in joint biophysics. This narrative review aims to summarize the current evidences on the efficacy of PEMF-therapy in the treatment of knee articular diseases. Preclinical studies have assessed the effects of PEMFs on chondrocytes, synoviocytes, articular cartilage explants and animal models, showing positive effects of PEMF-therapy on cells proliferation, extracellular matrix (ECM) production, chondrocytes apoptosis and inflammatory cytokines down-regulation. Currently, PEMF-therapy is a valid option in the conservative management of several knee articular diseases, including early OA, patellofemoral pain syndrome and SONK. PEMFs could be also used as an adjunct after an arthroscopic knee procedure or TKA implantation, in order to control the joint post-operative inflammatory state.

[PubMed Disclaimer](#)

LinkOut - more resources

Medical

[MedlinePlus Health Information](#)