http://www.ncbi.nlm.nih.gov/pubmed/21604221(**A Theoretical Study of Bone Remodel-ling under PEMF at Cellular Level (2011). "Pulsed electromagnetic field (PEMF) devices have been used clinically to slow down osteoporosis and accelerate the healing of bone fractures for many years.")**

actual article

A theoretical study of bone remodelling under PEMF at cellular level.

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Abstract

Pulsed electromagnetic field (PEMF) devices have been used clinically to slow down osteoporosis and accelerate the healing of bone fractures for many years. However, the underlying mechanism by which bone remodelling under PEMF is regulated remains poorly understood. In this paper, a mathematical model of bone cell population of bone remodelling under PEMF at cellular level is developed to address this issue for the first time. On the basis of this model and control theory, parametric study of control mechanisms is carried out and a number of possible control mechanisms are identified. These findings will help further the understanding of bone remodelling under PEMF and advance therapies and pharmacological developments in clinical trials.

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