

<http://www.ncbi.nlm.nih.gov/pubmed/3285429> (The Effect of Long-term Pulsing Electromagnetic Field Stimulation on Experimental Osteoporosis of Rats (1988). "These findings suggested that PEMF stimulation exerted a preventive effect against bone loss of osteoporotic hind legs. Furthermore, an observed increase in bone marrow blood flow seemed to be related with this increase of bone volume and bone formation activity.")

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## **The effect of long-term pulsing electromagnetic field stimulation on experimental osteoporosis of rats.**

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### **Abstract**

The author performed experiments in order to investigate what biological effect on the bone would be produced by long-term pulsing electromagnetic field (PEMF) systemic stimulation. In some of the mature female rats used as experimental animals, bilateral ovariectomy and right sciatic neurectomy were performed in order to make a model osteoporosis. PEMF stimulation was produced by repetitive pulse burst (RPB) waves at a positive amplitude of 25 mV, negative amplitude of 62.5 mV, burst width of 4.2 ms, pulse width of 230 microseconds and 12 Hz, with the magnetic field strength within a cage being set at 3-10 Gauss. PEMF stimulation over 6 months did not produce any effects on the physiologically aged bones. PEMF stimulation also did not produce any effects on losed cortical bone in osteoporotic hindlegs. On the other hand, an increase of bone volume and bone formation activity was observed in the cancellous bone of osteoporotic hindlegs. These findings suggested that PEMF stimulation exerted a preventive effect against bone loss of osteoporotic hindlegs. Furthermore, an observed increase in bone marrow blood flow seemed to be related with this increase of bone volume and bone formation activity.

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