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ORIGINAL RESEARCH

Electromagnetic field versus circuit weight training on bone mineral density in elderly women

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Background and purpose: Osteoporosis is a common skeletal disorder with costly complications and a global health problem and one of the leading causes of morbidity and mortality worldwide. Magnetic field therapy and physical activity have been proven as beneficial interventions for prevention and treatment of osteoporosis. The purpose of this study was to compare the response of bone mineral content and bone mineral density (BMD) in elderly women to either low-frequency low-intensity pulsed magnetic field (LFLIPMF) or circuit weight training (CWT) on short-run basis (after 12 weeks).

Patients and methods: Thirty elderly women, aged 60–70 years, were randomly assigned into two groups (magnetic field and CWT) (n=15 each group). The session was performed three times per week for magnetic field and CWT groups, for 12 weeks. BMD and bone mineral content of lumbar spine (L2–L4) and femoral neck, trochanter, and Ward's triangle were evaluated before and after 12 weeks of treatment.

Results: Both magnetic field and CWT for 12 weeks in elderly women seem to yield beneficial and statistically significant increasing effect on BMD and bone mineral content ($P<0.05$). But magnetic field seems to have more beneficially and statistically significant effect than does CWT.

Conclusion: It is possible to conclude that LFLIPMF and CWT programs are effective modalities in increasing BMD but LFLIPMF is more effective in elderly women.

Keywords: magnetic field, circuit weight training, bone mineral density, elderly women, bone mineral content, bone mass

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