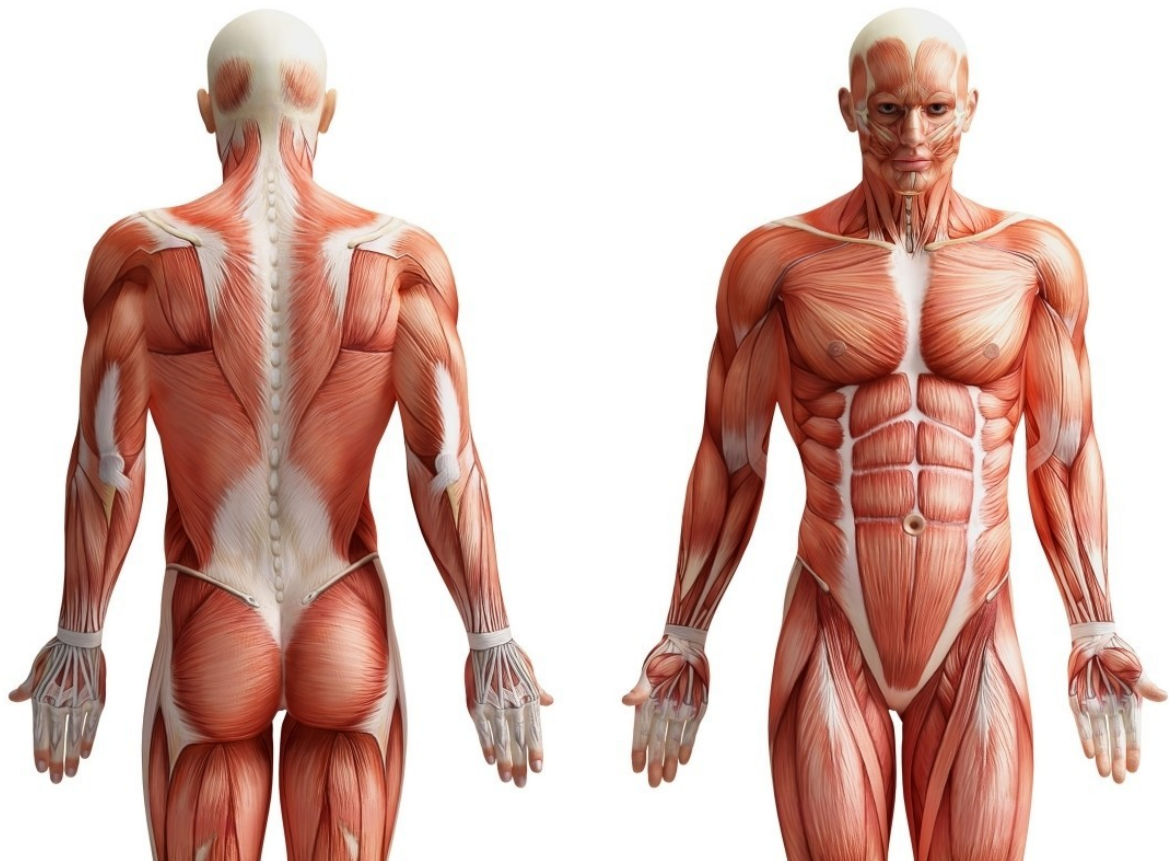


# Medical PEMF Studies



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## Muscle Rehabilitation – Enhanced Muscular Performance



September 16, 2010 David Rindge Bioelectromagnetic Research Library

Electromagn Biol Med. 2012 Jul 19. [Epub ahead of print]

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## Evaluation of inflammatory biomarkers associated with oxidative stress and histological assessment of magnetic therapy on experimental myopathy in rats.

Vignola MB, Dávila S, Cremonezzi D, Simes JC, Palma JA, Campana VR.

### Source

Cátedra de Física Biomédica, Facultad de Ciencias Médicas, Universidad Nacional de Córdoba, Argentina.

### Abstract

The effect of pulsed electromagnetic field (PEMF) therapy, also called magnetic therapy, upon inflammatory biomarkers associated with oxidative stress plasma fibrinogen, nitric oxide (NO), L-citrulline, carbonyl groups, and superoxide dismutase (SOD) was evaluated through histological assessment, in rats with experimental myopathy. The groups studied were: (A) control (intact rats that received PEMF sham exposures); (B) rats with myopathy and sacrificed 24 h later; (C) rats with myopathy; (D) rats with myopathy and treated with PEMF; and (E) intact rats treated with PEMF. Groups A, C, D, and E were sacrificed 8 days later. Myopathy was induced by injecting 50  $\mu$ l of 1% carrageenan (type IV) once sub-plantar. Treatment was carried out with PEMF emitting equipment with two flat solenoid disks for 8 consecutive days in groups D and E, at 20 mT and 50 Hz for 30 min/day/rat. The biomarkers were determined by spectrophotometry. The muscles (5/8) were stained with Hematoxylin-Eosin and examined by optic microscopy. Quantitative variables were statistically analyzed by the Fisher test, and categorical applying Pearson's Chi Squared test at  $p < 0.05$  for all cases. In Groups B and C, the biomarkers were significantly increased compared to A, D, and E groups: fibrinogen ( $p < 0.001$ ); NO, L-citrulline and carbonyl groups ( $p < 0.05$ ); SOD ( $p < 0.01$ ) as well as the percentage of area with inflammatory infiltration ( $p < 0.001$ ). PEMF caused decreased levels of fibrinogen, L-citrulline, NO, SOD, and carbonyl groups and significant muscle recovery in rats with experimental myopathies.

Vopr Kurortol Fizioter Lech Fiz Kult. 1995 Sep-Oct;(5):25-30

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