

## **Medical Cases, Clinical Papers and Testimonies**

### **Articles in Medical Journals**

At our Information Seminars I am often asked if there are any articles found in Medical Professional Journals with regard to Pulsed Electro Magnetic Field Therapy. Well, I found over 300 papers published in Medical Journals written by highly qualified medical practitioners and scientists. Below are three which I summarized in a few bullet points for easy comprehension -

#### **▼ Lancet Clinical Study 1984 -**

*Binder, Parr, Hazelman, Dept of Rheumatology, Addenbrooks Hospital, Hills Road*

- The value of pulsed electro magnetic fields (PEMF) for the treatment of persistent rotator cuff tendinitis was tested in a double blind controlled study in patients whose symptoms were refractory to steroid injection and other conventional conservative measures.
- The treated group had a significant benefit compared with the control group.
- At end of the 8 week study, 65% of the patients were symptomless and another 17% much improved.
- Clinical conclusion: PEMF therapy may thus be useful in the treatment of above condition and possibly other chronic tendon lesions.
- In another unpublished pilot study conducted by the same people, PEMF produced marked improvement for 67% of the patients after 4 weeks. This study included no control group, however.

#### **▼ Journal of Rheumatology, Oct 1994 -**

*Trock, Bollet, Markoll, Div of Rheumatology, Danbury Hospital, Danbury, Connecticut, USA*

- Conducted a randomised, double blind clinical trial to determine the effectiveness of PEMF in the treatment of osteoarthritis (OA) of the knee and cervical spine.
- Matched pair t-tests showed extremely significant changes from the baseline for the treated patients in both knee and cervical spine studies at the end of treatment and the one month follow-up observations.
- At the end of treatment the differences in the means of the two groups (treated and placebo) reached statistical significance for pain, pain on motion and tenderness for both the knee and the cervical spine patients, where the latter achieved the greater improvement.
- Clinical conclusion: PEMF has therapeutic benefit in painful osteoarthritis of the knee and cervical spine

#### **▼ Journal of Clinical Orthopedics and Related Research, Dec 1988**

*Borsalino et al, Dept of Orthopaedics and Traumatology, Montecchio Hospital, Emilia, Italy and the Dept Clinica Medica, University of Modena, Italy*

- Low frequency pulsing electro magnetic fields (PEMF) are being used in non-union healing at several centers of the world. Much debate exists as to quantification of the PEMF effects.
- The results of a double blind treatment of patients with femoral intertrochanteric osteotomy for hip degenerative arthritis are reported.

Roentgenographic evaluation shows statistically significant differences between controls and stimulated patients. In this extremely homogeneous patient population, PEMF stimulation favoured osteotomy healing.

▼ **Journal of Bone and Joint Surgery, March 1989**

*“Prevention of Osteoporosis by PEMF”*

*Rubin, McLoed, Lanyon Stonybrook, New York, USA*

- Potential role of the use of PEMF in the prevention of bone loss in immobilised patients; in the aging, postmenopausal population; and in astronauts who are subject to prolonged exposure to the microgravitational conditions.
- Structurally deleterious loss of bone may be slowed or prevented by appropriate use of non-invasive electro magnetic stimulation.

▼ **British Journal of Dermatology, April 1992**

*“A portable PEMF device to enhance healing of recalcitrant venous ulcers: a double-blind, placebo-controlled clinical trial”*

*Stiller et al, Dept of Dermatology, NY University Medical Center, New York, USA*

- Assessment of the efficacy and safety of PEMF limb ulcer therapy.
- 3 hour daily use, 8 week clinical trial as an adjunct to wound dressing. Wound surface area, ulcer depth and pain intensity were assessed at beginning, at weeks 4 and 8
- Significant decrease in wound area, wound depth and pain intensity favoured the stimulated group.
- Clinical conclusion: PEMF treatment is a safe and effective adjunct to non-surgical therapy for recalcitrant venous leg ulcers.

## **Effect of low frequency pulsing electromagnetic fields on skin ulcers of venous origin in humans: a double-blind study.**

Authors: *Ieran M; Zaffuto S; Bagnacani M; Annovi M; Moratti A; Cadossi R*  
Department of Medical Angiology, Arcispedale S. Maria Nuova, Reggio Emilia, Italy. Source: *J Orthopedic Research*, 1990 Mar; 8 (2): 276-82

**ABSTRACT:** The effect of an electromagnetic field on the healing of skin ulcers of venous origin in humans has been investigated in a double-blind study. Forty-four patients have been admitted to the study; one-half were exposed to active stimulators (experimental group) and the remaining to dummy stimulators (control group). The stimulation was scheduled to last a maximum of 90 days. The success rate was significantly higher in the experimental group both at day 90 ( $p$  less than 0.02) and in the follow-up period ( $p$  less than 0.005). The data suggest that the effect of the electromagnetic field lasts even when the stimulation is over. No ulcers worsened in the experimental group, while four worsened in the control group. Twenty-five percent of the patients in the experimental group and 50% in the control group experienced recurrence of the ulcer.

It is concluded that stimulation with an electromagnetic field is a useful adjunctive therapy in the management of these patients.

## **Pulsed electromagnetic fields in experimental cutaneous wound healing in Rats.**

Authors: *Patino O; Grana D; Bolgiani A; Prezavento G; Mino J; Merlo A; Benaim F*  
Department of Postgraduate Reconstructive and Plastic Surgery, Universidad del Salvador and Fundacion del Quemado.  
Source: *Journal of Burn Care Rehabilitation* 1996 Nov-Dec; 17(6 Pt 1):528-31

**ABSTRACT:** Electromagnetic fields are now being used in many diseases such as osseous, ligamentous, cartilaginous, or nervous reparation, diabetes and myocardial or cerebral ischemia. Although many publications show the usefulness of magnetotherapy, discrepancies exist about the utility of electromagnetic fields in skin wound healing. The objective of this work was to study the effect of pulsed electromagnetic fields on wound healing in rats. Twenty-two male Wistar rats were used; a circular lesion was made in the back of each animal. They were divided into three groups: group C (control) with sham treatment ( $n = 8$ ), group NF, treated with topical nitrofurazone solution ( $n = 7$ ), and group PEMF, treated with pulsed electromagnetic fields of 20 m T ( $n = 7$ ). The treatments were 35 minutes twice a day. The absolute and relative values of the area and perimeter of the wounds showed significantly lower values PEMF group at days 7, 14, and 21 compared with those in group C ( $p < 0.01$ , analysis of variance), whereas the PEMF group showed significantly lower values at day 21 only compared with the NF group ( $p < 0.01$ , analysis of variance).

The results suggest a significantly beneficial stimulation in the wound healing process in rats treated with PEMF, which could lead to the development of a practical tool for research and clinical use.