

## Decubitus Ulcer

Rom J Physiol. 1993 Jan-Jun;30(1-2):41-5.

### **The effect of diapulse therapy on the healing of decubitus ulcer.**

[Comorosan S](#), [Vasilco R](#), [Arghiropol M](#), [Paslaru L](#), [Jeanu V](#), [Stelea S](#).

Interdisciplinary Research Group, Fundeni Hospital, Bucharest, Romania.

The effect of pulsed high peak power electromagnetic field (Diapulse) on treatment of pressure ulcers is under investigation. 20 elderly patients, aged from 60 to 84, hospitalized with chronic conditions and bearing long-standing pressure ulcers, are subjected to Diapulse sessions (1-2 daily), parallel to conventional treatment. 5 patients undergo conventional therapy, serving as control and 5 others follow conventional+placebo Diapulse treatment. All patients were daily monitored, concerning their clinical status and ulcers' healing. After a maximum 2-weeks treatment, bulge healing rate was, as follows: 85% excellent and 15% very good healing under Diapulse therapy; in the placebo group, 80% patients show no improvement and 20% poor improvement; in the control group, 60% patients show no improvement and 40% poor improvement of ulcers. This investigation strongly advises for Diapulse treatment as a modern, uninvative therapy of great efficiency and low social costs in resolving a serious, widespread medical problem.

[Ostomy Wound Manage](#). 1995 Apr;41(3):42-4, 46, 48 passim.

### **The effects of non-thermal pulsed electromagnetic energy on wound healing of pressure ulcers in spinal cord-injured patients: a randomized, double-blind study.**

[Salzberg CA](#), [Cooper-Vastola SA](#), [Perez F](#), [Viehbeck MG](#), [Byrne DW](#).

The objective of this randomized, double-blind study was to determine if non-thermal pulsed electromagnetic energy treatment significantly increases the healing rate of pressure ulcers in patients with spinal cord injuries. Subjects included volunteers admitted to a Veteran's Administration Hospital in New York over a 2 year period and consisted of 30 male spinal cord-injured patients, 20 with Stage II and 10 with Stage III pressure ulcers. Subjects were given non-thermal pulsed high-frequency electromagnetic energy treatment for 30 minutes twice daily for 12 weeks or until healed. The percentage of pressure ulcers healed was measured at one week. Of the 20 patients with Stage II pressure ulcers, the active group had a significantly increased rate of healing with a

greater percentage of the ulcer healed at one week than the control group. After controlling for the baseline status of the pressure ulcer, active treatment was independently associated with a significantly shorter median time to complete healing of the ulcer. Stage III pressure ulcers healed faster in the treatment group but the sample size was limited. For spinal cord-injured men with Stage II pressure ulcers, active non-thermal pulsed electromagnetic energy treatment significantly improved healing.

[Med Biol Eng Comput.](#) 1993 May;31(3):213-20.

## **Treatment of chronic wounds by means of electric and electromagnetic fields. Part 2. Value of FES parameters for pressure sore treatment.**

[Stefanovska A](#), [Vodovnik L](#), [Benko H](#), [Turk R](#).

Faculty of Electrical & Computer Engineering, University of Ljubljana, Slovenia.

Subjects with spinal cord injury are often distressed by pressure sores, which usually appear after prolonged pressure (wheelchair, bed) across the soft tissue which has already lost sensibility and has diminished microcirculation. The healing ability and its dynamics depend on the state of the subject's overall health. Consequently, evaluation of a particular treatment requires careful consideration of as many as possible of the parameters relevant to healing and an adequate criterion for assessing the state of the pressure sore. Bearing in mind these two circumstances, the results of a multicentre clinical study are analysed. The aim of the study was to test two hypotheses: first that healing is faster when sores are also treated by electric currents (ECs) (in addition to conventional treatment); and secondly that there exist differences in the efficiency of the treatment if direct or low-frequency pulsed currents (FES parameters) are applied. The data analysed show that pressure sores are likely to heal twice as fast when treated with low-frequency pulsed currents. EC seems to improve the healing rate in cases where the natural healing mechanisms of the body are not sufficient (chronic wounds, older subjects).

[Decubitus.](#) 1991 Feb;4(1):24-5, 29-34.

## **Accelerated wound healing of pressure ulcers by pulsed high peak power electromagnetic energy (Diapulse).**

[Itoh M](#), [Montemayor JS Jr](#), [Matsumoto E](#), [Eason A](#), [Lee MH](#), [Folk FS](#).

The purpose of this study was to evaluate the effect of pulsed high-frequency, high peak power electromagnetic energy (Diapulse) in the healing of pressure ulcers. Patients with Stage II ulcers unhealed within three to 12 weeks and those with Stage III ulcers unhealed within eight to 168 weeks by conventional methods were included in the study. When Diapulse was added to conventional therapy during the nine-month study, all 22 patients healed as evidenced by photographs and measurements of the ulcers. Stage II ulcers healed in one to six weeks (mean 2.33) and all Stage III ulcers healed in one to 22

weeks (mean 8.85). The increased healing time can provide significant cost savings and improved patient care.