

Use of pulsating electromagnetic fields to heal fractures and physical trauma

The term fracture healing refers to the process of the knitting (growing together) of broken or wrenched bones.

Bones can break as the result of any force or form of physical violence. In some cases minimal force can cause the break as in osteoporosis. Broken bones can be recognized by the „unnatural“ movement or the inability to move a certain part of the body and by the severe accompanying pain, swelling and hematoma.

The most important preconditions for a successful healing of the bone are:

- the most precise adjustment possible and very close contact of both ends of the bone
- total immobilization of the broken parts of the bone until the healing process has been completed
- good blood circulation of the affected area
- good callus formation

Treatment of broken bones is alone the job of a physician, since they are the only ones with the appropriate X-rays that allow the precision placement necessary and who can check up on it. The bones are fixed and set in a plaster cast, and in complicated cases held together with nails, wires or plates. After the bone has been positioned and immobilized the formation of bone tissue begins. How quickly a bone heals and how much stress it can be subjected to and how free of pain it is depends largely on the formation of callus.

All injuries and effects of force (violence) on the body are known as trauma. This includes sprains and hematoma as well as breaks. The most frequent causes of trauma are sport injuries and household accidents.

Pain, swelling, skin discoloration and functional impairment are among the most obvious symptoms of trauma and in case of doubt should be examined by a physician.

Multiple traumas have to be considered differently since several serious injuries to various organs or parts of the body are present. Multiple traumas are life-threatening and must always be treated by a doctor. The most frequent causes are traffic accidents.

The following effects of the use of electromagnetic fields are significant for the treatment of broken bones and trauma:

- § Positive physiological effect on the condition of microcirculation, and increased utilization of oxygen in the capillary tissue
- § Positive effect on the protein biosynthesis (repair proteins)
- § Improved micro-hemodynamic conditions for the first steps of immunological processes, and thereby in indirect strengthening of the body's own defense mechanisms
- § Positive effect on the vegetative nervous system

Effects on movement apparatus or physical trauma

- afterimpression of the piezo electric effects, induction of the smallest electric tension (voltage) that control bone growth and structure
- mineral metabolism, especially of calcium, is regulated; this of special significance for the development of bone structure and muscle functions
- improvement of the microcirculation in the damaged tissue, promotion of the elimination of acids and metabolic end products
- stimulation of callus-building cells
- activation of the so-called „repair proteins“ and anti-inflammatory effective enzymes, which support the best possible regeneration of the damaged tissue

Electromagnetic field therapy, which can be used optimally by the BEMER 3000, is complex. This therapeutic method not only improves the circulation and oxygen supply, but also generally aids metabolic regulation. In conjuncture with other methods of biological and clinical medicine, its can often alleviate the symptoms and positively influence the entire clinical picture.

General recommendations for use in the healing of fractures

At home

mornings/evenings: use of the coil mat in accordance with the basic plan (Levels 3 – 6, see tips for users)

During the day: use of the intensive applicator on the fractured area with P4 twice daily

In the doctor's/therapist's practice

use of the coil mat at Level 3 or Program 2 twice daily

subsequent use of the intensive applicator with Program 4 on the fractured area once daily

General recommendations for use in the treatment of trauma

The best possible success can be achieved by applying the intensive applicator with Program 4 to the appropriate area **immediately** after the violent force. If an open wound is present, then the intensive applicator with Program 4 should be used after the wound has been cleaned, disinfected and covered with a sterile, thin compress. One can do without the usual cold treatment to reduce the swelling if the BEMER 3000 is used, since the use of the intensive applicator reduces the swelling.

At home

mornings/evenings: further use of the therapeutic plan being used

during the day: use of the intensive applicator with P4 in the injured region

At the doctor's / therapist's practice

daily use of the coil mat at Level 3 or Program 2

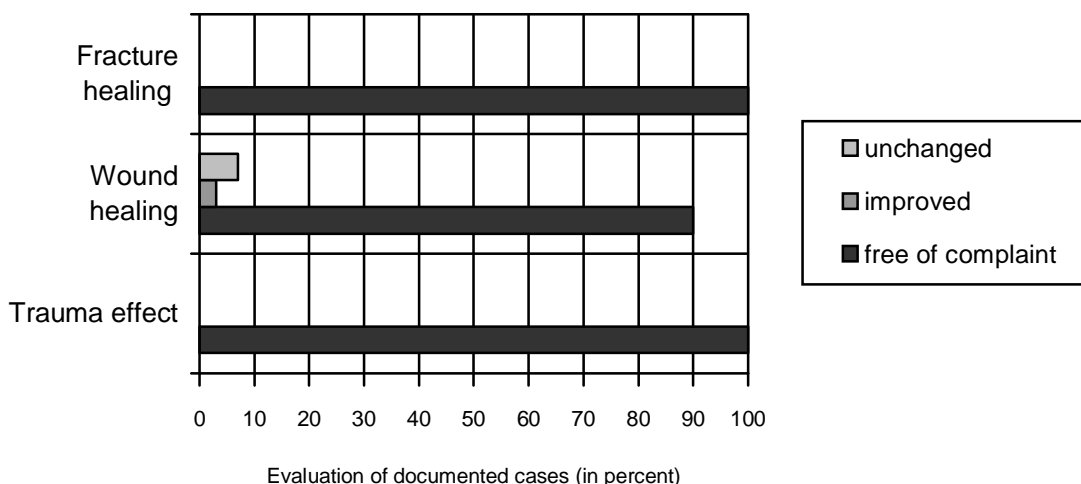
subsequent use of the intensive applicator with Program 4 in the damaged area.

The positive effects of the pulsating electromagnetic fields on bone and tissue metabolism, as well as the entire support- and movement apparatus have been proven in numerous scientific studies and its basic principles are well known

In a European wide user study conducted by physicians under the auspices of the AFB, the effects of the BEMER 3000 Therapy System on humans has been documented. A total of 1.116 cases were recorded and since a large number of these patients were afflicted with several illnesses a total of 2.031 cases were found. Ninety-nine cases were recorded (see graph) and after a therapy lasting on average six to seven weeks, the following results were found.

The best results were found in the area of non healing broken bones due to impaired callus formation.

Excerpt from the User Study by physicians using the dem BEMER 3000 System



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| Average length of therapy: | Fracture healing | = 5 weeks |
| | Wound healing | = 4 weeks |
| | Trauma effects | = 2 weeks |

Literature and studies:

Klopp, R.: *Magnetfeldtherapie: Komplementär-therapeutisch sinnvoll oder Unsinn?* Institut für Mikrozirkulation Berlin (2005)

Michaelis, H.: *Ärztliche Anwenderstudie 09/03.* Akademie für Bioenergetik (2003)

Michels-Wakili, S., Kafka W.A.: *BEMER 3000-typisch gepulste elektromagnetische Felder niedriger Energie reduzieren Zahnarztangst* (2003)

Please note: Broad acceptance of medical products generally takes several years. We are committed by law to advise you that the effectiveness of electromagnetic fields is still being discussed controversially and has not been commonly accepted.