

Pulsating electromagnetic fields for the treatment of **Bone Fractures and Physical Trauma**

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The healing of fractures encompasses the joining and growing back together of broken bones. Bones can break from any kind of forceful impact. In some instances even a light force can lead to a fracture, as is the case in Osteoporosis patients. A bone fracture is characterized by an 'unnatural' mobility or a lack thereof, as well as severe pain, swelling and haematomas.

The most important requirements for optimal healing of bone fractures are:

- Setting the bones as exact and close as possible
- Absolute immobilization of the broken bone until it has healed
- Efficient blood circulation in the affected area
- Good formation of callus

Treatment of bone fractures belongs in the care of medical practitioners, as the exact position of the broken ends can only be determined and examined via x-rays. Bones are immobilized through a cast and in complicated cases pins, plates and wire are used to hold both ends together. After the bone has been set and immobilized, bone tissue starts to develop. How quickly the bone heals to the stage where it can be used free of pain significantly depends on the formation of callus.

All injuries and wounds can be defined as traumas. This includes sprains and haematomas, as well as bone fractures. The most common causes of physical trauma are sports injuries and accidents in the home. Pain, swelling, skin discoloration and impaired functioning are obvious symptoms of traumas and in case of doubt, should be examined by a physician.

Polytraumas should be viewed separately, as they involve several severe injuries on different parts of the body. Polytraumas are life-threatening and always must be treated by a physician. The most common cause of polytraumas are road accidents.

The following effects of electromagnetic fields are of significant importance for the treatment of bone fractures and traumas:

General effects

- Improved blood circulation, especially microcirculation
- Increased oxygen absorption and increased oxygen partial pressure
- Improved blood viscosity
- Activation of cell metabolism
- Improved regulation, communication and coordination of the cells among each other (neuro-vegetative, neuro-endocrine, activation of transmitters and messengers, enzymes)

Effects on the locomotor system and physical trauma

- Piezo effect (induction of minute electrical voltage) activates bone growth and controls structure
- Metabolisation process of minerals, calcium in particular is regulated, which is of significant importance for the development of bone structure and muscle function.
- Improved micro circulation in the damaged tissues stimulates excretion of acids and metabolic waste products
- Stimulation of callus forming cells
- Activation of so-called 'repair proteins' and anti-inflammatory enzymes, which support the regeneration process of the damaged tissues

The use of electromagnetic fields (such as emitted by the BEMER3000) is a highly advanced treatment method that not only improves blood circulation and oxygen supply to muscle and nerve tissues, but also contributes to the regulation of the cell metabolism process within the entire organism. Optimal results can be achieved when combining BEMER3000 applications with other relevant treatment methods.

Best results are obtained when the intensive applicator can be used *immediately* after an injury has incurred. It should be set on P4 and placed on the affected site. In case of an open wound, the area should first be cleaned and disinfected, before applying a thin compress and finally treating it with the intensive applicator on P3. In the case of swelling/sprains, no ice should be applied (for 48 hours) with the BEMER3000, so as not to limit the physiological effect to lymph glands and blood circulation. Swelling should be gone in 5 minutes. (This is not a printing error). Please note:

BEMER3000 user recommendations for fracture, trauma and wound treatment are provided in the user manual, and specific conditions and programs are available from practitioners trained in BEMERtherapy. Please contact your closest practitioner or call the HOTLINE 1300 763 299

The positive effects of pulsating magnetic fields on the metabolism of bones and tissue, as well as the entire locomotor system, have been proven in numerous scientific studies. A BEMER3000 user study, conducted under the supervision of the Academy for Bioenergetics in Liechtenstein, documents the effect of BEMERtherapy treatments on human beings. 561 cases were examined. Best results were obtained in the area of fractures that had not been healing properly due to a lack of callus formation.

The following results are from a recent physician user study (*AFB Institute, 24.10.2003**), conducted in Europe with 99 cases: Fractures – 5 weeks; Open wounds – 4 weeks; trauma – 8 days:

CONDITION	NUMBER OF PATIENTS	COMPLAINT FREE (no pain)	IMPROVED	NO CHANGE
FRACTURES	22	22	0	0
OPEN WOUNDS	29	26	1	2
TRAUMA	48	48	0	0

References

1. Kafka, W.A., Extremely low, wide frequency range pulsed electromagnetic fields for therapeutical use, EMPHYSACE REPORT, 02.02.99
2. Michaelis, H., Technical Information BEMER3000 - Therapy, Academy for Bioenergetics, 5/99
3. Medical Eurostudy, Academy for Bioenergetics, 3/00 ©AFB, November 2000

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