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# BIOENERGETIC MEDICINES

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## DEFINITIONS

Often called “energy medicine,” the two main categories of bioenergetic medicine, are (1) *bioelectromagnetic therapies*, and (2) *biofield therapies*.

***Bioelectromagnetic medicine (BEM)*** utilizes external medical devices such as therapeutic magnets, TENS (transcutaneous electrical nerve stimulation), and pulsed magnetic fields. These devices apply extremely low-level electromagnetic fields (EM) (electrical fields of the order of microamperes or less; magnetic fields generally of the order of microTesla or less) externally to the body as therapy.

***Biofield therapies (BT)*** refer to medicinal use of the human body’s subtle energy using a wide variety of practices, and are administered by biofield practitioners who work with the subtle energy or biofield of the patient. *The concept of the human body’s subtle energy, vital force, or cosmic life energy is recognized in every medical system except allopathy.* In Ayurveda, this subtle energy is known as *prana*, *qi* in traditional Chinese medicine, *ki* in traditional Japanese medicine, *reiki* in the Usui system, *vital force* in homeopathy, *innate intelligence* in chiropractic, *vis medicatrix naturae* in naturopathy, and *olodumare* in Yoruba medicine.

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## HISTORY, PHILOSOPHY, AND METHODS

### BIOELECTROMAGNETIC MEDICINE (BEM)

BEM is an application of ***bioelectromagnetics***, the science that investigates the interaction of extremely low-level non-ionizing, externally applied EM fields with organisms. EM fields in medicine have a mixed history. Some uses including: radiation therapy, magnetic resonance imaging, and defibrillator devices are well known and used. Historically, many other EM devices used in medicine were later relegated to quackery. *In contrast to conventional EM medical devices, BEM devices operate at much lower energy levels* and often in extremely low frequency ranges (1-100 Hz) compared to EM devices used in conventional medicine.

BEM is more widely known and used in Russia, Europe, and Japan than in the U.S. The most prominent BEM devices employed in the U.S. are the (1) TENS (transcutaneous electrical nerve stimulation) devices for pain control; (2) PEMF for non-union bone fractures; and (3) TCS (transcranial stimulators) or TMS (transcranial magnetic stimulators), used to treat mood disorders and insomnia.

In practice, pulsed EM fields (PEMF) or pulsed magnetic fields (PMF) are the most frequently used therapeutic signals. They readily penetrate tissue in a painless, non-invasive manner and without side effects. FDA approved for over 20 years, one of the first and most successful uses of PEMF since the 1970s is for nonunion bone fractures. Over 250,000 patients worldwide have experienced beneficial results from this treatment (Bassett, 1993, 1994).

In *magnet therapy*, small static magnets (typically >100 Gauss; compare to MRI magnets at 10,000 – 30,000 gauss) are used to treat pain and other conditions by placement over acupuncture points, trigger points, or painful areas of the body. Patients as well as professional health practitioners use magnet therapy or magnotherapy. A wide variety of magnetic products are marketed as consumer health products. In a landmark placebo-controlled trial conducted at Baylor College, magnet therapy was found to significantly relieve pain in post-polio syndrome patients (Vallbona et al., 1997).

### BIOFIELD THERAPIES (BT)

The *biofield* refers to the complex, dynamic, extremely weak EM field within and around the human body that has been proposed as a super-regulator of health and healing (Rubik, 2002). Besides the EM components of the *biofield* emitted by the brain (EEG) and heart (ECG) that are well known in conventional medicine, the human *biofield* may also consist of more subtle energy fields as elaborated in Oriental Medicine, Ayurvedic Medicine, and other indigenous systems of medicine.

This subtle energy, vital force, or cosmic life energy is a key concept in many CAM modalities, and it is referred to by the many terms listed above from various medical systems (Rubik et al., 1994a). Such vitalistic principles underlie many CAM modalities besides energy medicine, but have been banished from conventional medicine. This fundamental philosophical difference is at the root of medicine's divided legacy (Coulter, 1994).

Moreover, Eastern medical systems of philosophy, treatment and diagnosis include specific "energy anatomical" concepts that have no equivalent in the science of allopathic medicine. These include the *acupuncture meridians*, along which subtle energy purportedly flows, and the *chakras*, seven key energy nodes that lie along the body's midline. Recently, scintigraphic evidence has shown some evidence for the acupuncture meridians

Biofield therapies emerged from native medicine traditions that embraced concepts of a vital force within and around the body, and are considered among the oldest forms of healing, with shamans and other healers performing laying-on-of-hands and other energetic interactions with patients. These modalities rest on the ancient belief that biofield practitioners can, by moving their hands through the patient's energy field, alter it--to remove blocks, restore energy flow,

realign and balance the energy field, thereby improving health and well being. BT does not involve massage or any physical adjustment of patients' bodies, as do the manual therapies: chiropractic, massage, and classic osteopathy.

In some practices, the biofield of the practitioner is employed directly in treating the patient; in others, the practitioner acts as a conduit to move what is considered to be a cosmic or spiritual life energy into the patient, or to otherwise mobilize the patient's biofield.

Modern forms of biofield therapy in the U.S. include such practices as: Therapeutic Touch (TT), Reiki, external qi, chakra healing, Healing Touch, and SHEN therapy. These therapies may involve touching the patient's body or not, depending upon the specific practice (Rubik et al., 1994a).

Perhaps most widely known and used is *Therapeutic Touch (TT)*, a technique developed by Dr. Dolores Krieger, professor of nursing at NYU, and now widely used by holistic nurses. TT involves an intentional use of the practitioner's hands to direct human energy for healing purposes without physical contact (Krieger, 1979). Over 21,000 health care professionals use TT worldwide.

Another widely used biofield therapy is *Reiki* (Japanese for "universal life energy"), a laying-on-of-hands technique that allegedly originated in ancient Tibet, and was rediscovered in the late 1800s in Japan (Stein, 1995).

*SHEN therapy* involves laying-on-of-hands to assist the patient's biofield to return to its normal flow throughout the body, as it releases deeply held or repressed emotions (Rubik et al., 1994a).

*Medical qigong* is a self-practice sometimes prescribed by holistic practitioners, whereby patients can work alone or with a qigong master to improve their own energy regulation through a combination of mindfulness with coordinated breathing, slow and sustained movement, and chanting exercises (Johnson, 2000; Sancier, 1996). External qi is the projection of energy from the body of a qigong master used to treat patients.

## BEM AND BT METHODS

Both BEM and BT involve the noninvasive application of extremely low-level energy fields to the body for therapeutic effects, and in fact may have a common scientific basis (Rubik, 1997b). In BEM, energy fields are applied by means of DC or AC electromagnetic devices; in BT, the practitioner's biofield with its EM components may be involved. Theories of nonlinear dynamical systems from biophysics predict that such extremely small energy stimuli used in energy medicine can affect the dynamics of the human body, even dramatically, to facilitate healing. Because the energy delivered to tissues using these therapies is, in many cases, physically nonthermal, i.e., lower than the energy content of thermal noise (random molecular motion at body temperature), the information carried by the signal rather than its energy content is the key element. A concept of bio-information that goes beyond that of biomolecules and genes has been proposed (Rubik, 1995; 1997b).

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## MAJOR CLINICAL APPLICATIONS

Empirical results from the world clinical literature show a very wide range of applications for BEM, including treatment of the following:

- fresh bone fractures (Wahlstrom, 1984).
- soft tissue injuries (Sisken & Walker, 1995).
- chronic venous insufficiency (Dovganiuk, 1995).
- improved immune status and postoperative recovery in cancer (Lubennikov, 1995).
- osteoporosis (Bilotta, 1989).
- Alzheimer's disease (Sandyk, 1994a).
- sports injuries (Pilla and Kloth, 1997).

Results obtained depend upon EM field parameters such as frequency, modulation, waveform, intensity, duration of exposure, and duration of therapy. Pulsed magnetic fields stimulate deep tissues best, because they pass through the body unattenuated (Barker, 1991).

Pulsed EM fields (PEMF) or pulsed magnetic fields (PMF) have been used therapeutically with great benefit. Areas of application include:

- **nerve stimulation** for intractable pain, multiple sclerosis (Sandyk, 1997), Parkinson's disease (Sandyk, 1994b; George, 1996), and spasticity reduction in cerebral palsy;
- **soft tissue repair** (Lee et al., 1993), healing of surgical wounds with increased tensile strength, decubitous chronic ulcers (Salzberg, 1995), increased angiogenesis, and the healing of recalcitrant chronic venous ulcers (Cadossi, 1990; Stiller et al., 1992);
- **bone repair**;
- **treatment of osteoarthritis**, including reduction of pain, swelling, and increased mobility (Trock, 1994); and
- **neuroendocrine applications** for epilepsy (Sandyk et al., 1992), relief from symptoms of drug withdrawal and alleviation of depression (Kirkcaldie, 1997; Conca, 1996), anxiety, and insomnia (Erman, 1991).

*Clinical studies indicate that biofield therapies are especially useful for treating anxiety (Keller et al., 1990) and pain (Quinn, 1984). A very limited number of studies suggest they may also stimulate immune function (Olson, 1997), hemoglobin formation (Krieger, 1976), and facilitate the healing of wounds (Wirth, 1992).*

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## RESEARCH SUMMARY

Due to the infancy of and lack of funding in the field, the majority of bioenergetic medicine trials are only pilot, prospective clinical studies, or case studies. There are many more clinical trials on BEM devices than on biofield therapies, because BEM devices are patentable, profitable, and economically based in private enterprise. Of the few well-designed trials on biofield therapies, most have tested the effectiveness of BT to reduce anxiety and pain.

For a complete summary along with a list of landmark studies, as well as their descriptions please refer to the [Bioenergetics Module](#).

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## BIBLIOGRAPHY

Below is a partial list of suggested books. For a complete bibliography, including articles and evidence-based references, along with an extensive suggestion list please refer to the [Bioenergetics Module](#).

Gandhi OP. *Biological Effects and Medical Applications of Electromagnetic Fields*. Englewood Cliffs, NJ: Prentice Hall, 1990.

Oschman JL. *Energy Medicine: The Scientific Basis*. New York: Churchill Livingstone, 2000.

Becker RO, Seldon G. *The Body Electric: Electromagnetism and the Foundation of Life*. New York: William Morrow, 1985.

Burr HS. *Blueprint for Immortality: The Electric Patterns of Life*. Essex, UK: Neville Spearman Publ., 2000.

Gerber R. *Vibrational Medicine: New Choices for Healing Ourselves*. Santa Fe, NM: Bear & Co., 1996.

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## WEBSITES

### **Bioelectromagnetics Society**

<http://www.bioelectromagnetics.org/resources.php>

### **Healing Touch International**

<http://www.healingtouch.net/>

### **Nurse Healer Practitioners Associates International (NH-PAI)**

<http://www.therapeutic-touch.org/>

### **International Society for the Study of Subtle Energies and Energy Medicine**

<http://www.issseem.org/>

### **Qigong Institute**

<http://www.qigonginstitute.org/>

### **Touch Research Institute**

<http://www.miami.edu/touch-research/>

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