

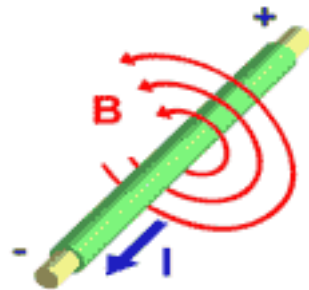
Bioelectromagnetic Therapy



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Bioelectromagnetic Therapy is the application of electromagnetic fields to treat and prevent disease and to promote health and longevity. Electromagnetism is a powerful clinical tool, simple to apply yet complex in its biological effects. Whenever current (I) passes through a wire, it induces



a magnetic field (B). Although the electricity itself remains confined within the wire, the magnetic field induced moves outside. What makes this treatment so remarkable is that living tissue is essentially transparent to magnetic fields. When a varying electromagnetic field is placed close to a conductive medium such as the human body, it will induce electrical currents.

BT may be new to the reader, but it has been applied clinically almost from the moment we learned to send electricity over wire. It is standard practice in eastern Europe where it has been studied systematically for many years. Positive results are documented in a lengthy list of conditions, and thousands of studies have been performed.

How significant is BT? In 1992 Dr. Andrew Bassett, who helped pioneer the first FDA approved bioelectromagnetic device, wrote:

"In the decade to come bioelectromagnetics will assume a therapeutic importance equal to, or greater than, that of pharmacology and surgery today. With proper interdisciplinary effort, significant inroads can be made in controlling the ravages of cancer, some forms of heart disease, arthritis,

hormonal disorders, and neurological scourges such as Alzheimer's disease, spinal cord injury, and multiple sclerosis.”¹

What can be treated? Effects of magnets and electromagnetic fields have been studied in:

Alzheimer's Disease • Amyotrophic Lateral Sclerosis • Arthritis • Asthma • Atherosclerosis • Bone Healing • Bronchitis • Burns • Cervical Osteoarthritis • Chronic Venous Insufficiency • Dental Problems • Depression • Diabetes • Elbow Pain • Endometriosis/Endometritis • Epilepsy • Eye Disorders • Facial Nerve Neuropathy/Paralysis • Fibromyalgia • Glaucoma • Gynecology • Headache • Hearing Loss • Heart Disease • Herpetic Stomatitis • Hypertension • Insomnia • Kidney Failure/Inflammation/Stones • Knee Pain • Laryngeal Inflammation • Leprosy • Limb Lengthening • Liver/ Hepatitis • Lupus Erythematosus • Lymphadenitis • Mandibular Osteomyelitis • Maxillofacial Disorders • Migraine • Multiple Sclerosis • Muscle Rehabilitation • Muscular Dystrophy • Neck Pain • Nerve Regeneration • Neuropathy • Optic Nerve Atrophy • Osteochondrosis • Osteoporosis • Pain • Pancreatitis • Parkinson's Disease • Paroxysmal Dyskinesia • Pelvic Pain • Peptic - Duodenal Ulcer • Periodontitis • Pneumonia • Poisoning – Detoxification • Post-Mastectomy • Post-Polio Syndrome • Post-Herpetic Pain • Prostatitis • Pseudoarthrosis • Psoriasis • Rheumatoid Arthritis • Schizophrenia • Seasonal Affective Disorder • Shoulder Pain • Sinusitis • Sleep – Insomnia • Spinal Cord Injury • Stroke • Tendonitis • Tinnitus • Transcranial Magnetic Stimulation • Trophic Ulcer • Tubal Pregnancy • Tuberculosis • Urinary Incontinence • Urinary Inflammation – Trauma • Uterine Myoma • Vasomotor Rhinitis • Vestibular Dysfunction • Whiplash • Wound Healing • Wrinkles

To view what researchers have written regarding the above and more, visit the Bioelectromagnetic Research Library at www.HealingLightSeminars.com.

Biological Effects

Electromagnetic force, or charge, is a fundamental power of the universe. It determines the structure of all atoms and molecules and how they interact. Charge may be positive or negative, attracting or repelling. Since all chemical, biological and molecular interactions are fundamentally electromagnetic, an externally applied EM fields might be expected to have profound biological effects at many levels.

Some of the documented effects of electromagnetic fields include accelerated healing, greater cellular energy (increased ATP), vasodilatation / increased blood flow, reduced inflammation and edema, relaxation of

¹ From http://www.newmediaexplorer.org/chris/2004/09/16/bioelectromagnetic_medicine_the_book.htm

muscles, cell membrane changes / enhanced movement of calcium, sodium and other ions, bone formation, improved oxygenation, better sleep, lysis of clots, reduction in the adhesion of platelets, increased fertility, enhanced cognitive ability, improved central and peripheral nerve function, reduced stress and better mood.²

Osteoporosis and Arthritis

Bioelectromagnetics has proven effective in healing non-union fractures and stimulates the formation of new bone with documented benefits in osteoporosis and arthritis. It may be the best treatment available for strong bones. With correct treatment, significant increases of bone density have been documented in remarkably short periods of time.

Osteoporosis patients frequently suffer from “compression” fractures due to fragile bones. Bioelectromagnetics has been reported to alleviate pain, heal existing fractures and prevent future breaks as normal bone density is restored. Bone density has been documented to increase by 5.1 % in three months in one study.³

Case Study – Osteopenia⁴ / Hip Pain

AB, a 71 year old female diagnosed with osteopenia, came with pain and bone loss identified in her right hip by Dexascan. She was treated three times weekly for twelve weeks with whole body BT, and weekly laser therapy was administered over the area of pain and bone loss. Pain scores which had been 4 were 0 by the third week. Bone density measured by Dexascan was within normal limits after 12 weeks.

Alzheimer’s disease, Parkinson’s disease and MS

Positive results with bioelectromagnetics have been documented in variety of disorders affecting the central and peripheral nervous system, including Parkinson’s disease, Alzheimer’s diseases, stroke and multiple sclerosis. 6 abstracts related to Alzheimer’s disease, 21 for multiple sclerosis, 16 related to Parkinson’s disease and 9 pertinent to stroke are posted at www.HealingLightSeminars.com.

² Adapted from www.drpawluk.com

³ Garland DE, Adkins RH, Matsuno NN, Stewart CA. *The effect of pulsed electromagnetic fields on osteoporosis at the knee in individuals with spinal cord injury*. J Spinal Cord Med. 1999 Winter;22(4):239-45.

⁴**Osteopenia**: is low bone mass, usually measured by Dexascan between 1 and 2.5 standard deviations below normal. (Osteoporosis is more severe bone loss, > 2.5 standard deviations.)

Case Study – Parkinson’s Disease

SA, a 74 year old female, was diagnosed with Parkinson’s disease 4 year’s earlier. She was also diabetic and on blood pressure medication. Her complaints were muscle weakness, poor coordination, low energy, back pain, stress and depression. She was treated with daily bioelectromagnetic therapy x 35 days and weekly acupuncture and laser therapy.

SA reported dramatic increases in energy, muscular control and mood. Blood pressures and sugars, color and demeanor improved. Her gait became steady and rapid. The time to go from a sitting in the lobby to supine position in the treatment room was reduced from 40 to 21 seconds.

Atherosclerosis, Hypertension, Heart Disease

Bioelectromagnetic therapy has been documented to have significant benefits in cardiovascular disease based on the research, both on its own and in combination with laser therapy.

When Abramovich et al treated 66 elderly patients suffering from hypertension and ischemic heart disease with bioelectromagnetics, they reported, “.....a geroprotective effect as shown by improved microcirculation, myocardial reactivity, central hemodynamics reducing biological age of cardiovascular system and inhibiting its aging.”⁵ 6 abstracts related to heart disease, 20 concerning hypertension and 5 related to atherosclerosis are available in the Bioelectromagnetic Research Library at www.HealingLightSeminars.com.

Magnetic vs. bioelectromagnetic therapy

The strength of the field of a static magnet falls off too quickly to have the kinds of effects which electromagnetic fields are documented to generate at depth in tissue. Whereas bioelectromagnetic therapy will induce electrical currents according to variations in the field, static magnets have no dynamic component and cannot create any electrical induction unless physically moved. Bioelectromagnetic fields of sufficient intensity may be identified by magnets or detectors at significant distances. Static magnets placed in a bioelectromagnetic field may add to the intensity of the total field.

⁵ Abramovich SG, Fedotchenko AA, Koriakina AV, Pogodin KV, Smirnov SN. *[The characteristics of the geroprotective action of magnetotherapy in elderly patients with combined cardiovascular pathology]* Vopr Kurortol Fizioter Lech Fiz Kult. 1999 Sep-Oct;(5):7-9.

Applying Bioelectromagnetics

BT may be given as a stand alone treatment or in combination with many other methods. It is easily administered to the entire body. Given as a pre-treatment or in combination with acupuncture, bioelectromagnetic therapy may improve outcomes by relaxing muscles, reducing stress and opening the channels and blood vessels even before a needle is inserted.

Bioelectromagnetics is generally (but not always) more subtle than laser therapy. Systems range in intensity from well below that of earth's magnetic field to many thousands of times greater.

Laser therapy with a probe of sufficient power is likely to give more direct and immediate effects than bioelectromagnetics. Along with acupuncture, it may be the best first choices for most specific or local complaints, but the decision need not be either/or. Bioelectromagnetics may be combined happily with all of these and with many other treatments.

Safety

BT seems to be quite safe. Many millions have been treated successfully without harm. Marko Markov, co-editor of Bioelectromagnetic Medicine writes, "Magnetic and electromagnetic fields are now recognized by the XXI century medicine as real physical entities that promise healing of various health problems even when conventional medicine has failed. Today magnetotherapy provides a noninvasive, safe and easy method to directly treat the site of injury...Compared to regular pharmaceuticals, PEMF offers an alternative with fewer, if any, side effects."⁶

Side effects are rare. The most common is hypotension. Allow the patient to rest supine with the field turned off. Some few individuals are also sensitive to electric fields. Ask.

Although I am optimistic that many of the caveats below may be overturned, William Pawluk has many years of experience with BT and advises:

Absolute contraindications

1. Pacemaker/other implanted or external medical devices.
2. Pregnancy.

⁶ Markov, Marko, *PULSED ELECTROMAGNETIC FIELD THERAPY, HISTORY, STATE OF THE ART AND FUTURE*, submitted to Electromagnetic Biology and Medicine for publication Nov '06.

3. Myasthenia Gravis
4. Hyperfunctional endocrine glands
5. Active TB, acute viral diseases
6. Malignancies
7. Psychoses
8. Organ Transplant

Relative contraindications / Caution:

- Excessive or active bleeding
- Severe systemic fungal disease.
- Neurological disorders which include seizures
- Hypotension or with those predisposed.
- Severe hypertension / severe atherosclerosis

Recommended Reading

Rosch and Markov, eds, *Bioelectromagnetic Medicine*, Marcel Dekker, New York, 2004.

Jerabek J and Pawluk W, *Magnetic Therapy in Eastern Europe: a Review of 30 Years of Research*, Advanced Magnetic Research Institute of the Delaware Valley, Chicago, 1998