

## **Reported Effects of PEMF Therapy**

Magnetism is one of the universe's fundamental powers. It has been used medicinally in China for over 2,000 years. The use of magnets to treat illness has also been described historically in many other civilizations, and was suggested by ancient Egyptian priests and in the 4<sup>th</sup> century BC by Hippocrates. The 15<sup>th</sup> century Swiss physician and alchemist Paracelsus theorized that magnets may be able to attract diseases and leach them from the body. Our ability to produce and control electro-magnetic fields and to use them to diagnose and treat has expanded enormously with the advent of electricity and electro-magnetics. Today, magnetic fields play an important role in Western medicine, including use for magnetic resonance imaging (MRI), pulsed electromagnetic fields, and experimental magnetic stimulatory techniques.

### **PEMF Therapy is the application of electro-magnetic fields to treat and promote health.**

Although this emerging technology may be new to North America, it has been studied systematically throughout Eastern Europe and in the countries of the former Soviet Union for over 50 years and is a standard treatment for many conditions.

*How important is PEMF Therapy? In 1992 Dr. Andrew Bassett, who helped pioneer the first FDA approved device using pulsed electro-magnetic fields, wrote, "In the decade to come bioelectro-magnetics 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."*

### **Effects of electro-magnetic 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

There are numerous published theories regarding the possible medicinal value of electromagnetic fields. Besides addressing specific conditions, many health promoting benefits have been reported, including increased energy and availability of oxygen, enhanced transport of ions (calcium, potassium, sodium) across cell membranes, improved circulation, enhanced sleep, pain relief and stress reduction. Other proposed mechanisms include effects on blood vessels (improvements in blood circulation, increases in oxygen content of the blood, alkalization of bodily fluids, decreases in blood vessel wall deposition of toxic materials or cholesterol plaques, relaxation of blood vessel (due to effects on cellular calcium-channels), effects on the nervous system (alterations in nerve impulses, blockage of nerve-cell conduction, reduction of edema (fluid retention), increases in local tissue oxygen, increases in endorphins, relaxation of muscles, changes in cell membranes, or stimulation of acupoints (similar to the proposed activity of acupuncture needles). In some types of traditional Chinese medicine, magnets are believed to set up specific patterns of flow of the body's life force or chi (*qi*). There is also speculation that regular PEMF treatment may increase longevity and quality of life.

Pulsed Magnetic fields pass through the body as if it were transparent which may account for many, far-reaching and systemic effects.

**Reported effects include:**

- Vasodilation
- Reduction of edema
- Reduced platelet adhesion
- Fibrinolysis
- Acceleration of enzyme reactions
- Enhanced calcium, sodium and other ion movement
- Muscle relaxation
- Stimulation of nitric oxide production
- Enhanced membrane function
- Enhanced sodium – potassium exchange
- Improved cellular energy
- Immunity changes
- Amino acid changes
- Reduced nerve cell firing
- Repair of soft tissue
- Free radical effects
- Anti-oxidant stimulation
- Brain Function Effects
- Stress Reduction
- Hormonal Changes
- Learning Changes
- Scar Modification

- Enhanced Metabolism
- Water Modification
- Electrolyte Changes
- Bone Healing
- Acceleration of Bone Formation
- Autonomic Nervous System Actions
- Enhanced Oxygenation
- Inflammation Reduction
- Sleep Improvement
- Changes in metabolism of medications
- Liver Function Changes
- Enhanced Wound Healing
- Improved Fertility
- Receptor Binding Changes

Magnet therapy may be administered by a healthcare professional, or used by individuals on their own. Pulsed electromagnetic fields (PEMF) may be applied to areas of the body affected by illness, or to the entire body.

Scientific evidence suggests that pulsed electromagnetic fields (PEMF) may be useful in the healing of non-union tibia fractures. PEMF and laser therapies are frequently combined in research and in the clinic and may enhance one another.

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DISCLAIMER: Natural Standard developed the above evidence-based information based on a thorough systematic review of the available scientific articles.

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