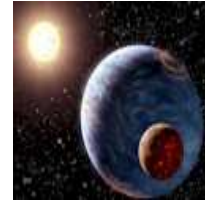


Beneficial Effects of Pulsed Electromagnetic Fields



For more than 2000 years, the effects of magnets and low-frequency electromagnetic fields on biological processes have been investigated and debated. The term "magnet" was probably derived from Magnes, a shepherd who discovered mysterious iron deposits attracted to the nails of his sandals while he was walking in an area near Mount Ida in Turkey ("Magnesia"). These deposits, now known to be magnetite (magnetic oxide, Fe₃O₄), were known to the ancients as "Heracleian Stones," lodestones ("leading stones"), or live-stones (lapis vivus).



Beneficial effects of Pulsed electromagnetic fields

Tens of thousands of people have already been treated successfully with Pulsed Electro Magnetic Fields PEMF systems in more than 40 countries worldwide, improving dramatically their quality of life!

Pulsed Electro Magnetic Fields influence cell behavior by inducing electrical changes around and within the cell. Improved blood supply increases the oxygen pressure, activating and regenerating cells. Improved calcium transport increases absorption of calcium in bones and improves the quality of cartilage in joints, decreasing pain dramatically. Acute and even chronic pain -also caused by osteoporosis- may disappear completely.

There are many scientific studies on the degree of effectiveness of Pulsed Magnetic Field therapy. It was found that disturbances in blood circulation and in metabolism play a key role in the development of diseases. Application of pulsed electro magnetic energy is based on more than 30 years of worldwide research carried out by renowned scientists. In addition there are many years of practical experience by thousands of physicians.

The discovery of deposits of magnetite within the human brain!!!

Kirschvink JL, Kobayashi-Kirschvink A, Woodford BJ. Magnetite biomineralization in the human brain. Proc Natl Acad Sci USA. 1992; 89:7683-7.

Dr. Robert O. Becker's *The Body Electric* (1985) came into publication over twenty years ago. His groundbreaking work challenged the scientific world by showing that changes in our body depend on electromagnetic (EM) potentials. Dr. Becker's ideas initially were received with skepticism, yet today we know that every chemical reaction in the human body is an electromagnetic event. Opposite, minute charges "attract" each other to form compounds necessary for life. Oxidants and antioxidants essentially act in similar ways, but they possess properties that allow us to direct that

attraction. Here is where pulsed electromagnetic fields (PEMFs) can dramatically enhance our body's antioxidant capacity.

Scientists have been exploring the role of free radicals for human health since the 1970s. Nobel Prize Laureate Dr. Linus Pauling emphasized the importance of antioxidants for keeping us healthy, and for speeding recovery from injury, illness, and other trauma (including surgery). Naturally occurring antioxidants were discovered in laboratory animals in 1978, sparking a renewed scientific interest that continues today. Now people routinely take antioxidants to support the body in healing conditions as diverse as arthritis, angina, sciatica, and stroke.

Oxidants and antioxidants operate "paramagnetically." That simply means they are capable of being influenced (i.e., drawn to and oriented) by electromagnetic (EM) fields (compass effect). When oxidants and antioxidants move toward one other, EM fields guide their reactive surfaces much like a key in a lock, opening the door to rapid neutralization of dangerous oxidants, and thereby stopping oxidative damage in the body. Without EM fields, the body must rely on chance to neutralize oxidants. EM fields works in part by lining up the body's natural antioxidants with free radicals to neutralize them much more rapidly. Stopping free radicals stops inflammation and begins the healing process.

Because antioxidants are so important to quality of life, you may ask, "What are they 'anti' to?" The answer evidently is "oxidants," yet we rarely hear this term used to describe them. Are antioxidants all "good" and oxidants all "bad"? In this context, the answer is yes. But we must understand why these oxidants (also known as "free radicals" or "oxyradicals") can be so destructive for living tissues.

Oxidants are the first chemicals to appear in aging, illness, and injury cycles. When they go unchecked, they activate other chemicals and greatly accelerate these cycles, sometimes rapidly moving out of control. During these free radical "cascades" great damage occurs in biological systems (i.e., death can occur). A good analogy is the process of oxidation causing steel to rust. Yet in our bodies, oxidation causes aging. During states of stress, illness, and injury, massive quantities of oxidants are created in the body. For example, during physiological stress, the mitochondria generate large quantities of free radicals. Moreover, free radicals must be neutralized before healing can begin. Therefore, the faster free radicals can be neutralized, the better for the health of the body.

Quenching of free radicals typically occurs randomly in the body. In the case of injury, for example, it may look as follows: oxidants and antioxidants approaching and bumping into each other, and sometimes reacting. But in most instances, the "key" misses, and they just bump and move apart. Colliding with other structures, and still highly destructive, oxidants expand injury, indiscriminately destroying both healthy and damaged tissue. Finally, perhaps hours or days later, all the oxidants are neutralized.

In contrast, EM fields removes "chance" as a factor. Moreover, speed is essential in quenching free radicals, because healing cannot begin until oxidative damage stops. It has been shown that PEMFs can increase the effectiveness of antioxidants existing in the body up to 100 times (see Stanford study). In sum, electromagnetic pulses accelerate healing by acting as a catalyst to correct the alignment of antioxidants and free radicals, making it easier for the antioxidants to connect with the free radicals -- and thereby quench them.

PEMF FIELDS SUPPORT YOUR BODY'S NATURAL ANTIOXIDANT RESPONSE

The significance of PEMFs for increased antioxidant activity may best be illustrated by what can happen during a "stunning" event (i.e., "stunning trauma"), in which a person or animal may be on the brink of death due to sudden catastrophic injury or illness. In such as event, massive quantities of free radicals are released. In these situations, there is a critical period (approximately 12 hours) in

which the body must call upon a “constitutive” response (i.e., a response based on elements that are already present) in order to deal with massive free radical assault.

During the critical hours of the body’s “constitutive” response to large-scale trauma, PEMFs can help the body's antioxidant systems manage the overwhelming release of free radicals. After these initial 12 hours, the body typically gains enough time to produce additional elements via a “transcriptive response” in which transcription from DNA enables production of building blocks for regeneration and healing. This extreme “stunning” situation serves to illustrate the critical difference that PEMFs can make when the body suddenly must mount an aggressive (i.e., survival) response against massive free radical assault (and the consequent damage due to cascade effects) before there has been enough time to generate the additional antioxidants necessary to counteract the free radicals fully.

Increasingly deeper understanding of the means by which pulsed electromagnetic field (PEMF) therapy neutralizes oxidants is leading to improved quality of life, injury rehabilitation, and bodily responses to illness. EM fields holds exceptional promise in conditions from back pain to migraine, improves wound healing, and decreases aging whenever oxidant chemicals are released during stress, illness, inflammation, or injury. Due to the fact the free-radical activity is involved in most, if not all, degenerative conditions, as well the aging process itself, EM fields boost antioxidants quenching of free radicals in the body offers great potential for improving health, vitality, longevity, and well-being.

The healing response is the vital means by which an organism marshals its diverse repair strategies in reaction to injury or disease. This article discusses the question of how much energy may be necessary to stimulate or ‘jump start’ the repair of injuries, or to reverse disease processes. The question obviously is of major clinical importance. Clinical and behavioral research validates the ‘less is more’ principle of energetic interactions. Convincing evidence came in 1975, when a number of scientists confirmed that extremely weak low frequency electric fields can have significant effects on important regulatory processes in the brain. These findings led to the concept of the power/frequency window, the narrow range of signal properties that will produce a maximum biological effect. This was a turning point in a lingering controversy over beneficial vs harmful environmental field effects on physiology and behavior and the applications of subtle energies in healing.

MEDICAL Studies

THE FACTS ARE HERE

There are no side effects reported with therapeutic PEMF use in animals or humans. PEMF technology has been used internationally for more than a century. PEMF in the US has been approved for fractures since 1979. There are nearly 3,000 PEMF articles found in the National Library of Medicine.

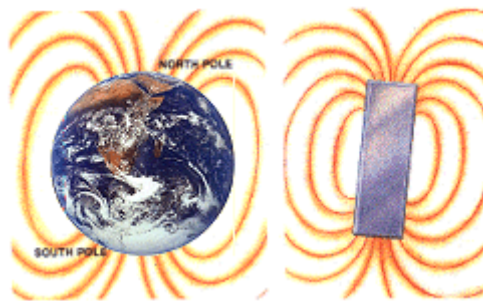
More Beneficial effects of electromagnetic fields.

Bioelectric Research Center, Columbia University, Riverdale, New York 10463.

Selective control of cell function by applying specifically configured, weak, time-varying magnetic

fields has added a new, exciting dimension to biology and medicine. Field parameters for therapeutic, pulsed electromagnetic field (PEMFs) were designed to induce voltages similar to those produced, normally, during dynamic mechanical deformation of connective tissues. As a result, a wide variety of challenging musculoskeletal disorders have been treated successfully over the past two decades. More than a quarter million patients with chronically ununited fractures have benefitted, worldwide, from this surgically non-invasive method, without risk, discomfort, or the high costs of operative repair. Many of the athermal bioresponses, at the cellular and subcellular levels, have been identified and found appropriate to correct or modify the pathologic processes for which PEMFs have been used. Not only is efficacy supported by these basic studies but by a number of double-blind trials. As understanding of mechanisms expands, specific requirements for field energetics are being defined and the range of treatable ills broadened. These include nerve regeneration, wound healing, graft behavior, diabetes, and myocardial and cerebral ischemia (heart attack and stroke), among other conditions. Preliminary data even suggest possible benefits in controlling malignancy.

J Cell Biochem. 1993 Apr;51(4):387-93.Bassett CA.



*Magnetic Therapy works by affecting our blood. Normally the blood operates in a North Pole orientation, or under a North Pole effect. In this polarity the blood is oxygenated and its process of distributing nutrients and pulling wastes and toxins from injured tissue is made most efficient. When the body is ill or injured the polarity of the site is switched by the body to a South Pole orientation. This creates faster, excited movement meant to draw blood cells to the area for healing. The blood does not work well in a South Pole orientation. Its movement does not allow normal function and an acid state is developed, which micro-organisms, viruses and malignance thrive in. *The chart below shows the affect of North and South Pole applications on the body.* Once the blood has been drawn to the area, the body, with the help of the Earth's magnetic field is supposed to change the polarity of the blood back to a North Pole orientation so positive activity by the blood may take place. [More](#)*

SUMMARY OF NASA STUDY ON PEMF TECHNOLOGY

NASA'S RECOMMENDATIONS

BENEFITS:

- REPAIRING TRAUMATIZED TISSUES
- MODERATING NEURODEGENERATIVE DISEASES
- DEVELOPING TISSUES FOR TRANSPLANTATION

NASA'S CONCLUSIONS PROVIDES:

- ACCELERATED CELL GROWTH
- BETTER ORGANIZED CELL MORPHOLOGY
- GREATER CELL VIABILITY
- UPREGULATION OF GENES RELATED TO CELL RESTORATION AND GROWTH
- UPREGULATION OF GENES RELATED TO COLLAGEN PRODUCTION
- BIOELECTRIC POTENTIATION OF NERVE STIMULATION AND RESTORATION
- HIGH-SPEED SQUARE WAVE INCREASED CELL GROWTH FOUR-TIMES FASTER

Weak Magnetic Fields in the Treatment of :-

Ankle Sprain	Chronic	Parkinson's Disease
Arthritis	insomnia /generalized	Respiratory Problems
Bone Fractures	anxiety	Skin Disorders
Bone non-union, delayed union	Glaucoma	Spinal Cord Injury
Bronchitis	Ligament and tendon	Tourette's Syndrome
Cancer	problems	Ulcers
Dental Problems	Neck Pain	Venous Insufficiency
Diabetes	Nerve problems	Wound Healing
Epilepsy	Osteoarthritis	Various health problems
Genitourinary	Osteoporosis	
Stroke	Pancreatitis	
Headaches		
Hepatitis A and B		
Hypertension		
Lupus		
Multiple Sclerosis		
Migraine		

The processes involved in cell and tissue repair and regeneration represent one of the most fundamental properties of complex organisms. Any physical or chemical process capable of improving wound healing merits thorough investigation. In comparison with the advancement and acceptance of magnetic instruments in many other scientific fields, the use of magnetic field energy in the practice of medicine remains extremely limited, despite the fact that magnets for medical treatment are readily available commercially. Both static and time-varying magnetic fields have been successfully applied to treat a variety of musculoskeletal problems. For example, after its description over 25 years ago, the use of electromagnetic fields to help trigger the healing of fracture nonunions¹⁻³ has become an accepted clinical practice worldwide.

Articles Indicating more specific applications of the PEMF ELECTROTHERAPEUTIC GENERATORS

Although well-controlled studies have been performed on the stimulation of bone growth by electrical and magnetic fields, the effects of magnetic fields on soft tissues remain unclear; they represent the next frontier in electromagnetic biology and medicine. It has been demonstrated in animal experimental wound models that these modalities can promote healing and increase wound tensile strength.⁹⁻¹² Electrical and magnetic fields have been associated with a number of demonstrable effects advantageous to wound healing, including increased collagen deposition,

enhanced fibroblast migration, increased migration of macrophages and leukocytes leading to decreased bacterial counts, decreased sympathetic vasoconstriction, increased cellular oxygen delivery, and increased wound epithelialization.⁹⁻¹²

Evidence exists that magnetic field therapy can be effective in improving some of the most important factors in wound management, namely, the optimization of the supply of nutrients and oxygen to the treated area. This is of major importance in the case of surgical skin flaps. It is well known that skin flaps exhibit progressive ischemia, with potential tissue necrosis, toward their distal end. An accumulation of neurotransmitters follows the transection of sympathetic nerves during flap elevation, with the resultant vasoconstriction inducing a temporary capillary occlusion within the flap. This sequence of events further involves ischemia followed by reperfusion in the transition zone between adequately perfused proximal tissue and inadequately perfused distal areas. It has been shown in animal studies that the treatment of skin flaps with electric current or magnetic fields may prevent severe ischemia, thus avoiding ischemia/reperfusion injury.

Sexual Disorders

Magnetotherapy exhibited beneficial effects with respect to cavernous blood flow in male patients suffering from sexual problems. Weak magnetic fields in men suffering from various sexual disorders, including decreased erection and premature ejaculation.

I.I. Gorpinchenko, The Use of Magnetic Devices in Treating Sexual Disorders in Men.

General & Post Operative Healing Studies

Cell Response to Pulsed Electromagnetic Fields (PEMF)

Medical Applications of Pulsed Electromagnetic Fields (PEMF)

Pulsed Electromagnetic Fields (PEMF) and Intracellular Processes

Electromagnetic Stimulation Shows Promise For Treatment-Resistant Depression

VETERINARY APPLICATIONS

Pet parents of large and small pets can help their beloved animals suffering from conditions as diverse as arthritis, postoperative wound healing, and other conditions by using therapeutic Pulsed electromagnetic field (PEMF) to reduce pain and speed up healing. Users and veterinarians alike report excellent results using therapeutic PEMF for dogs, cats, horses, and other animals.

Pulsed electromagnetic field (PEMF) therapy actually began with veterinary applications for horses in the mid-1970s when large animal veterinarians and trainers began treating bowed tendons, and back and hip conditions. This preceded PEMF applications in human medicine by a number of years. At that time Pulsed electromagnetic field clinicians were interested in human applications, which fed their interest in then-current PEMF applications for equine healing and therapy.

Clinicians observed horses arriving before treatment unable to bear weight on a leg, yet later running across a 10-acre training area after 4 days of treatment with Pulsed electromagnetic field technology. In addition, wound healing and other beneficial effects following surgery or open lacerations were seen.

On an individual level, everyone, regardless of age, experiences one or a combination of all of the

following: headaches, stress, fatigue, anxiety and/or energy problems. Pulsed Electro Magnetic Fields have become a viable solution to many of these common problems. Consider that...

7 out of 10 people have back and/or neck problems.

7 out of 10 people have asthma and/or bronchitis and/or other respiratory problems.

7 out of 10 people have allergies and/or sinus problems.

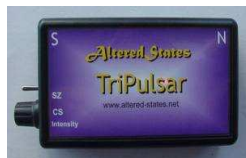
7 out of 10 people have chronic discomfort, depression, chronic fatigue and/or any one of a thousand other discomforts or health problems.

7 out of 10 people have sleep disorders.

How motivated would any person be to obtain a viable solution to any of these serious problems?

The reality is this, everyone has some health problem, and many have a combination of these health problems. And now there is something new in the preventative health and wellness field. The health care industry in the United States alone is estimated to be worth well over one trillion dollars in 1996. Only 10% of those dollars are being spent on preventative or alternative modalities. However, society as a whole is seeking complementary or alternative solutions right now! People around the world are now beginning to rediscover the benefits of using Pulsed Electro Magnetic Fields for health.

Pulsed Electro Magnetic Systems



Beck Tri-Pulser

Colloidal Silver Generator,
Beck Zapper and
Beck Magnetic Pulsar,(Weak PMF)
All in One



Bioelectric Pulser

Beck Zapper
Hulda Clarke Zapper
Colloidal Silver Gen
Beck Magnetic Pulsar (Weak PMF)
All in One



SOTA Magnetic Pulser (Strong PMF)

Pulsed Kilogauss Magnetic Fields: "... Externally applied magnetic resonance of lymph, spleen, kidney and liver which helps to neutralize germinating, latent alien invaders and thus blocks reinfection [Beck]."



The Portable Rife/Crane Mark 4

Both Weak and Strong Pulsed Magnetic Fields (PMF)

The Portable Rife/CraneMark 5

Magnetic Healing Support Products

Flex Wrap Products



Sources

<http://www.drman.com/>

<http://www.integratedhealth.com>

<http://altered-states.net>