<http://www.centurionsystems.com/pmf-therapy/>

**What is PMF Therapy?**

Pulsed Magnetic Field Therapy (PMF), also referred to as Pulsed Electromagnetic Field Therapy (PEMF) uses electrical energy to direct a series of magnetic pulses through injured tissue whereby each magnetic pulse induces a tiny electrical signal that stimulates cellular repair.



Healing, whether bone fractures or soft tissue follow very similar progressive stages:

1. Hemostasis: the blood clots, and blood vessels constrict to halt any further damage to the area. 2. Inflammation: pathogens and cell debris are removed, clearing the way for proper cell growth. 3. Collagen and in the case of bone fractures, cartilage and lamellar bone is deposited and formed. 4. In the final phase these new structures are remodeled to mimic the original formation.

But what does this have to do with PMF therapy? In order to understand how pulsed magnetic fields work, we need a basic understanding of how cells react either when we are in pain or have suffered a bone fracture or soft tissue damage. Each stage deals with cells and how they behave. Pulsed magnetic fields help increase cellular metabolism by positively influencing ion exchange within cells.

The keyword here is positively. What this means is that cells with a low concentration of sodium ions and high levels of potassium ions help maintain cell membrane potential – keeping the rest potential advantageous.

This benefits the healing process in several different ways: it stimulates tissue and increases blood flow, reduces swelling and speeds up hemostasis and inflammation allowing the body to move onto the rebuilding phase sooner. By moving the inflammation stage to the proliferative (soft tissue) or reparative (bone) phase it reduces pain which is most associated with inflammation.

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

##### **“I feel pulsed electromagnetic therapy may be one of the greatest discoveries in the history of medicine.”**

- Dr. David Williams,
Alternatives for the Health Conscious Individual - (March 2004)

"In all living things energy is more fundamental than chemistry."

 - James Oschman, author of Energy Medicine

##### **“This idea of manipulating cellular activity with magnetically induced electrical currents is looking like one of the hottest new fields around.”**

- Andy Bassett, MD on the future of PEMF, Journal of Bodywork and Movement Therapies

### ***PEMF Fact:***

*NASA scientists assayed all forms of electric and electro-magnetic devices alleged to restore tissues after injury and found nano-second PEMF up to 4 times better than any other device.*

http://www.pemfinfo.com/index.php/general-links

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

http://www.pemfinfo.com/index.php/nih-pubmed-articles

http://www.pemfinfo.com/documents/milner\_townsend\_may\_2010.pdf

Dr. Milner – [www.biomagneticrelief.com](http://www.biomagneticrelief.com) drmilner@biomagneticrelief.com

Living Cells Are Direct Current Systems – Treating the Electrical Cause of Disease Our living cells are electrical direct current (DC) systems. In fact, all life generates an electrical DC charge. This natural charge is created by the movement of ions in and out of cell membranes, creating and maintaining a membrane charge of approximately 70 mV. Any challenge to the cell, such as oxygen/ nutrient deficiency, toxicity, tissue changes, or inflammation alters ion movement, and the charge on the cell membrane changes. This altered charge profoundly affects metabolic nutrition into and waste products out of the cell. Pulsed Electromagnetic Field Cellular Exercise PEMF takes alternating current (AC) and transforms it into DC, producing variations ranging from low to high voltage. This voltage is passed through a coil, generating a safe, pulsed magnetic field around the coil. As the magnetic field is pulsed on, electrons are excited, and cells exposed to the magnetic field are exercised and expanded. The electrically charged cell membrane is gently pulled by the pulsing magnetic field, and the matter as well as the space around matter is recharged. On the off phase of the pulse, the cells relax. This is profoundly beneficial cellular exercise and cellular rehabilitation. As cells expand and relax, they rehabilitate, ion movement improves, and the membranes’ electrical charge begins to return to optimal. As cells recharge themselves, they heal and return to optimal function. Highintensity PEMF is not a medical device in the US. It simply produces a pulsed magnetic field of varying strengths functioning as a cellular exerciser. It is not intended for the treatment, diagnosis, or prevention of any disease or condition.

### ***PEMF Fact:***

*Harold Saxton Burr (1889-1973), Professor of Anatomy at Yale University School of Medicine researched the energy fields of organisms, and published 93 papers on biological electricity between 1932 & 1956.  He discovered that measurable imbalances in the electrical field of an organ precede the onset of pathology and that if the electrical imbalance is corrected, the disease does not manifest*

<https://www.dovepress.com/search_results.php?search_word=pemf>

<http://article.sciencepublishinggroup.com/pdf/10.11648.j.ajhr.20130103.13.pdf>

https://www.alternativa.clinic/wp-content/uploads/2015/04/PEMF-2000-Studies-2.pdf

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https://www.ncbi.nlm.nih.gov/pubmed/2686932