

EM Pulser™



User Manual

BIO-FRIENDLY MODEL 78 WITH OPTIONAL PLUG IN ATTACHMENTS

EM Pulser 78 activates HSP 70, upregulates the growth and restorative genes while it downregulates the destructive or dysregulatory genes to help achieve homeostasis. These effects can have a profound influence on any disease.

NOTE: *User Manual* is also online at www.tinyurl.com/PulserManual with active ref. links

Revised 2023 - **Model 78** – 7.8 Hz pulse rate

Warranty

The EM Pulser has a one-year warranty from the date of purchase that includes parts and labor. It also has a thirty (30) day money back guarantee. We are confident of the integrity of your device and know that with proper use, it will give you years of service. If you have any service issues, call our manufacturer and **Service Center** → **Integrity Design at 802-872-7116** to receive advice on your unit. If necessary, you will receive authorization to return the unit for repair or replacement. Even after one year, service is still available at a moderate service fee. For a refund on your purchase price within the **first thirty days**, proof of purchase is required. EM Pulser is not intended to diagnose, cure, treat, or prevent specific diseases, injury, or illness and no claims are made. The product has not been evaluated by the FDA.

Manufacturer's liability is limited to the return of the purchase price upon return to point of purchase, provided a claim is made within 30 days of purchase. EM Pulser carries a **1-year** warranty against manufacturer's defects with normal use (to be determined at manufacturer's discretion).

NOTICE: There is a DIFFERENT ADDRESS for REPAIRS:

> **Integrity Design & Research LLC, 182 Browns River Road, Essex Junction VT 05452** < You may also call 802-872-7116 to speak with Dr. Saba Hanna if needed for questions about repair.

Disclaimer

The EM Pulser is an experimental device. It is not intended to prevent, treat, cure, or diagnose any disease. No claims are made for the use of the EM Pulser in any particular medical problem. None of the statements in this User Manual have been evaluated by the FDA. For medical conditions see your doctor for treatment.

This User Manual is for educational purposes only and does not address any specific individual circumstances. No medical advice or recommendations are offered, and no doctor-patient relationship is intended or established. Always visit your own licensed health care provider to obtain medical advice and/or treatment. In particular, your licensed health care provider should always be consulted before using any off-label treatment for a medical condition.



Developed and Marketed by

Integrity Research Institute
5020 Sunnyside Avenue, Suite 209
Beltsville MD 20705
301-220-0440, 800-295-7674

Quick Start Instructions

Your EM Pulser Model 78 is supplied with a rechargeable battery that is charged to the optimum voltage and normally can give you at least 6 hours of ON time for a single charge, since the circuit is a low current design:

1. **Plug it in to fully charge first.** The guidelines for Li-Ion batteries are to cycle them by charging and discharging in the mid-range (25%-75%) most of the time. **Note:** the RED light LED may blink on/off when the battery starts to signal a low voltage and then it will become a steady red. *This is normal* and the EM Pulser can still be used for hours afterwards, until the GREEN light goes out but be aware that this will full drain the battery. In rare cases, the low voltage RED light LED never goes on before the unit stops working after the GREEN light LED goes out. If this is the case, send your battery back to *Integrity Design in Vermont* with a note and they will replace it. **The GREEN light LED** is designed to show you the 7.8 Hz Tesla-Schumann signal directly *by visibly flickering* at the same frequency as the pulsed Schumann Resonance magnetic field.
2. Now, you can **watch the DVD** featuring Dr. Glen Gordon who explains ways on how to use the EM Pulser ("EMPulse" originally). **This is very helpful.** *If you don't have a DVD Player*, watch it online: <https://tinyurl.com/DoctorGordon> .

General Directions and Information About the EM Pulser 78

By Chief Engineer, Thomas Valone, PhD, PE

The EM Pulser utilizes the state-of-the-art pulsed electromagnetic fields (PEMFs) and specifically a square wave pulsed coil for a repeated magnetic field which is very penetrating, into joints, bone, and tissues. Glen Gordon MD invented the old EMPulse and cured many people including himself *with the device held close to the body for hours at a time*. We have kept the fast pulse risetime feature in the new EM Pulser, which activates Heat Shock Protein (HSP70) that counters inflammation effectively, even in cases of tissue trauma. Doctors have purchased the units from us, for their own use and in their clinics, so give it a try on your body.



This revised and improved model renamed the EM Pulser retains the **vital "nanosecond risetime"** which Dr. Gordon championed as the major reason for its efficacy based on a NASA study. In bioelectromagnetics, disturbing the tissue with a sudden change is more effective than a steady state field (electric or magnetic) or a sinusoidal, slowly or rapidly changing field. My book, *Bioelectromagnetic Healing*, explains the scientific reasons for this and cites studies that prove it. PEMFs

tend to be at least ten times more effective than steady state (DC) fields. More information:

www.BioenergyDevice.org

Note: You may feel tingling, mild aching, or nothing at all during or after use of the EM Pulser. These are not indicators of efficacy or proper functioning of the EM Pulser. Consult your health care provider as to appropriate activities to resume following the use of your EM Pulser. If you do however, feel heat, tingling or even pain after 20 minutes to an hour of use of the EM Pulser or a complimentary ceramic magnet treatment (see below), we have found that means cellular transformations have taken place which are favorable but need time to acclimate to the new changes. Therefore, it is wise to temporarily discontinue treatment of the EM Pulser simply rest a few hours or a complete day before trying either one again. Dr. Gordon was able to use his relatively weak EMPulse in his shirt pocket on a daily basis for hours for congestive heart failure, which he overcame with this invention. It is a 7.8 Hertz pulse rate (Schumann Resonance) and a coil with a remarkably fast nanosecond risetime to activate HSP 70.

MAGNETIC COIL:

Standard usage varies, but Integrity Research Institute recommends **30-45 minute applications** no more than 1-3 times per day to start. **For maximum effect, you may "aim" the COIL circle Treatment Zone at the area of discomfort.** See image here from the backside of EM Pulser. The magnetic treatment coil is



located right underneath the 'COIL' word in the circle (inside the case) and the pulsating field can penetrate tissue up to 6 inches or about 15 cm with a decreasing intensity with distance, in a direction perpendicular to the backside COIL area of the unit. Lightly contact the skin or coverings such as light clothing. In an unhurried manner, move the EM Pulser back and forth across the area of discomfort and if comfortable, leave it in one place (e.g., neck, arm, leg) with the blue Velcro strap supplied with this unit, if you thread it through the "belt loops" on the back of the blue rubber boot. You may also thread a regular belt through those belt loops

and wear the EM Pulser around your waist, *just to harmonize your body* to the earth's natural frequency. If you see no improvement in 3-4 days, consult your healthcare provider. Sit on it for prostate or urinary disorders (on a soft chair).

LEDs: The GREEN LED light on the EM Pulser will stay on when the switch is in the ON position. The RED LED will turn on when a **low battery** around 6 volts DC occurs but the unit will still produce a significant square wave pulse for at least two hours more before the voltage gets too low to be effective. **Turn to OFF position (toward the power socket) to plug in the AC Recharger to charge the battery.** The AC Recharger unit will also power the unit in the ON position but it will flicker between red and green if ON. A Li-Ion rechargeable 9V battery is the **ONLY** type that can be used to replace the IRI-supplied battery and use with AC Recharger. If the AC recharger light is blinking on and off, or if green, or if completely off, it should be *disconnected* and run just on the battery power only, since it means the *battery is fully charged*.

Tech Details: We recommend for testing purposes that you use the small magnetic compass we supply to you and place it directly on the center of the COIL area of the backside of the EM Pulser (when you take it out of the rubber boot). The **compass needle will unmistakably jiggle or vibrate**, proving the strength of the extremely low frequency (ELF) 7.8 Hz (+/- 2%) magnetic field being produced. For those

interested, the magnetic field averages to about **10 gauss** at the COIL center, from approximately 80 to 100 gauss pulses, each with a rise-time of less than one hundred nanoseconds, and an 8% duty cycle, which Dr. Gordon would approve.

Power of Pulsed Electro-Magnetic Field (PEMF) Energy

AC Recharger

The AC Recharger is supplied for 110 VAC or 240 VAC to charge Li-Ion batteries or run as an AC adapter (with or without the battery in place).

Do not use ANY other AC adapter transformers as they may damage the EM Pulser which will also void the warranty, besides creating the danger of explosion or fire, since they will NOT turn off when the battery is fully charged, as this one does very reliably.

This AC Recharger/Adapter has an LED on the TOP side which will be **GREEN** as soon as the EM Pulser is



fully charged to its capacity. If it is GREEN when the EM Pulser is RED, then unplug and plug it back in. The AC Recharger will usually be RED during charging but it will take longer to charge its full potential while the EM Pulser is ON. Switch the EM Pulser to the OFF position to charge the battery and plug in AC Recharger (this LED will be RED if battery is low). The LED on the AC Recharger will turn to GREEN when fully charged or *will be flickering in time with 8 Hz signal if the EM Pulser is ON*).

Note: the black rubber cover of the AC Recharger socket protects little fingers from touching the 9 Volts of electricity inside the socket, so it should cover the AC Recharger socket

except during use. Note the AC Recharger may be difficult to push into the power socket on the EM Pulser and may not fit all the way on. This is normal. If the barrel plug is **twisted as it is pushed in the first time**, it will go in more easily.

Why the EM Pulser is superior to other PEMF devices

Dr. Gordon, MD, was the inventor of the old EMPulse. He was an international Sports Medicine & Rehabilitation expert, and has devoted over 20 years of R&D to PEMF technology. In 1982 Dr. Gordon was the first to propose **nanosecond speed** as critical for effective therapeutic PEMF applications. This has now been proven by **NASA** in the largest study ever done on PEMF. Why is NASA studying PEMF? Because astronauts cannot heal naturally from injuries once they leave the earth's magnetic field, so they have to take it with them in a medical device. That's how fundamental this technology is to human health.

The EM Pulser stops pain and inflammation, promotes healing and wellness when *placed on any body site* with pain. **Keep the EM Pulser on the site as long as tolerated.** Start with 20-30 minutes or several hours. A belt loop is built in so one can wear it all day.

NASA's four-year study defining speed as the critical pulse factor concluded: "square waves with rapid dB/dt (nanosecond speed) can be used for *"growing tissue for transplantation----- restoring tissue after trauma-----and mitigating some neurodegenerative disorders"*. They found nanosecond technology *"capable of stimulating classes of genes associated with cell growth and restoration in a no way marginal manner"*.

*"When we began research on EMPulse we refined the EMF pulse to nanosecond speed, and healing rates increased dramatically. Believe it or not, this advance was ignored for twenty years. Finally, in 2003, NASA scientists found nanosecond pulses like ours 2.5-4.0 times better than older pulses at restoring tissue after trauma. This is due, among other factors, to nanosecond PEMF's marked ability to **stimulate growth hormone.**" -- Dr. Glen Gordon*

Now again in 2022, NASA reconfirmed that using PEMF with "high slew rate" can regenerate cartilage. See the article about this amazing discovery on Page 15 of this User Manual.

Warnings

Contraindications: Not to be used in pregnancy, infancy, or with implanted electronic devices, such as a pacemaker. If you have a pacemaker and still insist on using the EM Pulser (as one customer has done), then only treat the lower torso, below the waist at least a foot away from the chest area.

DO NOT USE in water, moist environments (sauna) or when heavy sweating, such as during exercising.

Under no circumstances should you or the device be partially or completely immersed in liquid during use or cleaning. It is sufficient to wipe the device with a moist cloth or alcohol wipe between uses. Do not pour alcohol or any other cleaning solutions on the device. The above cleaning recommendations will not interfere with the function of the device. The AC recharger transformer shown below requires no cleaning.

References

Available from Integrity Research Institute are Dr. Gordon's "Sample Articles" and his "Complete Works" (upon request) with articles from the *Cellular Physiology* journal and others to help explain the

discovery that PEMF can stimulate the HSP70 protein which is a chaperone protein that repairs and protects whenever there is a trauma to tissue (including heat shock). He also designed the old EMPulse to have the fastest rise time so the dB/dt (change of magnetic field per time) could be the most effective in creating the beneficial effects, even within ten to twenty minutes. Furthermore, it stabilizes the free radical equilibrium which we both agreed is a big deal. The EM Pulser also upregulates the growth and restorative genes while it downregulates the destructive or deregulatory genes to help achieve homeostasis. This effect alone can have a profound effect in any disease and stop inflammation within only twenty (20) minutes, as we have experienced personally. On the next page, you will see the amazing “**Cardioprotection**” article that motivated us to complete the new Model 78 EM Pulser with the Schumann frequency of 7.8 Hz. After that is another showing benefits for blood pressure with the SAME frequency of 7.8 Hz. Let us know your experiences.

Complimentary Magnet Treatment: It should be noted that **low intensity, cheap ceramic magnets** of any type (e.g. refrigerator magnets) may be used, at for example one inch apart, in the vicinity of the treatment or trauma zone alternatively with EM Pulser treatments. (Strong neodymium magnets are not recommended). The weak magnets can be sewn between two pieces of cloth for example and are analogous to applying a “DC” magnetic treatment, which is complementary to the “AC” EM Pulser. I personally like using the “**self-heating” magnetic therapy tourmaline neck pad** anywhere on the body that may ache and need the EM Pulser too (alternate between them every few hours). One example is shown here that is less than \$10 from [Amazon.com](https://www.amazon.com). I recently had a severe left hip joint pain that constricted movement and required lots of hours of nighttime EM Pulser treatment. However, putting a magnetic neck pad against my hip on one side of my undershorts during the day and that hip also created internal heat when the trauma was still there. I also used capsicum and [MSM cream](#) on the skin after the shower each day as well. Rather than a hip replacement the complimentary AC/DC treatment worked to fully restore movement and relieve the chronic pain in less than one month. We now sleep with the Model 78 for more peaceful rest. A client says he uses it on both temples before bed for a few minutes.



Ed. Note: The effects and conditions below were all suggested and provided by Dr. Glen Gordon.

This is a list to review PEMF medical studies for off-label applications, as indicated by Dr. Gordon:

- Swelling
- Tendonitis
- Cuts/Bruises
- Arthritis
- Neuropathy
- Backache
- Sciatica
- Bites/Stings

ALSO this other conditions such as: OSTOCHONDRITIS, LOW BACK PAIN, MUSCLE LOSS, MUSCULOSKELETAL INJURIES, NECK PAIN, NON-UNIONS, OSTEOARTHRITIS, OSTEOPOROSIS, PSEUDOARTHROSIS, SMALL/LARGE JOINT ARTHRITIS, TENDONITIS, WHIPLASH, BOWEL SURGERY,

ENDOMETRIOSIS, ERECTILE DYSFUNCTION, USE AFTER GENERAL SURGERY for decreasing pain, inflammation and speed the rate of healing.

KEY POINTS ON THE SUPERIORITY OF THE EM PULSER PEMF:

1. EM Pulser technology is safe and has never had a reported side effect.
2. The EM Pulser is a handheld device. Weighs two ounces and can be used at home, in your car, while battery powered, with or without the blue **rubber boot** (which is washable with mild soap and water).
3. EM Pulser is vastly superior to "light" or "static magnets" but compliments their use.
4. EM Pulser heals injury and relieves pain - proven by NASA

Testimonials

For several months, my pulse has been about 130 when it should be 90 to 95. The doctors have found no explanation. Yesterday, I used an ace bandage to strap the EM PULSER to my chest for several hours and I did this again today. Yesterday, the rate dropped to 113 after treatment and today to 102. Thank you! -- Jonathan K.

Just to let you know. I put one of the new devices on my knee and am holding it in place with an ace bandage. I was in much pain going up and down stairs and up hill. What I noticed immediately putting it on is I felt like something was holding my leg gently so it could do what it is supposed to do which is heal itself. My knee feels stronger just having the device on it continuously. As I walk up the stairs I am not in as much pain having had it on for only ten minutes so far. It is not placebo because I am being very careful to see what the body is doing and not want it to work so to speak. So I am so happy it is reducing my pain immediately. It feels like a warm protective shield around the injured area. Thanks. -- Rozanne B.

More testimonials (two pages and growing) are posted online at www.BioEnergyDevice.org

How to Use Your New EM PulsePad – and suggestions for using the EM Pulser 78

The PulsePad attaches to the EM Pulser, just like all of the other accessories. Its magnetic coil is FLAT, so it is a great substitute for the bulky EM Pulser, if you desire to have the electrotherapy INSIDE your clothing. Here I am, a day after laparoscopic surgery on my abdomen substituting the EM PulsePad for painkiller drugs. Note the BELTLOOPS on the EM Pulser allows me to hang the EM Pulser on my belt, while wired to the PulsePad. I also slept with it on my tummy all night, tucked in my underwear.



The compass we supply lets you convince yourself that the PulsePad has its own magnetic field, even though the Pad is very flat. The secret is our spiral pancake coil that transmits the magnetic pulse very efficiently.



Some women don't have belts, so our blue Velcro strap can fit through the Beltloops on the back of the EM Pulser 78, just like it is pictured here to the right →

Then, you can attach the EM Pulser control box anywhere on your leg perhaps (see below), around the waist, or even around the upper arm, like a jogger.



So now you see that with or without the PulsePad, the EM Pulser 78 is very versatile and can be conveniently put or applied to the body in many ways. Use the PulsePad when needed, say at night for a sore back, neck, etc. where the Pulser itself may be too bulky.

We often tell the story of a US Postal delivery person who had lower back pain. He put the PulsePad in his pants under his belt, with the Pulser control box in his pocket. He came back to tell us how it helped him deliver letters all day. Watch the Dr. Gordon DVD for lots of great applications of this technology! - TV

Our EM Pulser 78 improves memory with long lasting effects

[Nature Neuroscience](#) (August 2022) reports “repetitive (4-day) transcranial alternating current stimulation (tACS) protocols for the selective, sustainable enhancement of auditory-verbal working memory and long-term memory in 65–88-year-old people.”



Experiment #1, IRI reproduced the protocol shown on the monitor (from Nature, Aug. 2022) with the EM Pulser for working memory improvement. Our **EM PULSER** does this for you! For us seniors, this is good news, with “preferentially improved long-term memory on days 2–4 and 1 month after intervention.” So with my Sherlock Holmes hat on, I decided to investigate what neuromodulation of “synchronous low frequency” the Boston University scientists were using. Their focus was simple: (1) **Working Memory (WM)** for brief information

storage and (2) **Long Term Memory (LTM)** for sustained maintenance of information. They did stimulate for 20 minutes, four days in a row, and tested for a month afterward. The findings are remarkable and reproducible with the [IRI EM Pulser 78](#), which has a 7.8 Hz Schumann Resonance pulse rate. See complete article online at <https://doi.org/10.1038/s41593-022-01132-3>. The first protocol used by the scientists was to electrode the left side of the skull (IPL), focusing on the spot above the ear with a theta brainwave 4 Hz pulse rate to stimulate WM. Many of us know that many electrode(s) to the body experiment has often resulted in noninvasive improvements with magnetic pulsing instead (which causes internal electric currents by Faraday’s Law). The bone healing research of Drs. Bassett, Pilla, and Becker are the prime example that I always cite as medical doctors who preferred the noninvasive magnetic coil pulsing over electrodes. Therefore, also knowing that 8 Hz is the first harmonic of 4 Hz, we can scientifically and confidently apply our EM Pulser 78 to the same spot on the skull for 20 minutes per day, four days in a row, to get very similar results. See the EM Pulser 78 on the left side of my head with the supplied Velcro headband.



Experiment #2. IRI reproduced an equivalent setup with the EM Pulser 78 for Long Term Memory (LTM) improvement. The second protocol at Boston University was to electrode the left front of the forehead focusing on the spot above the left eye with a 60 Hz pulse rate for LTM. Here, a little research reveals that the gamma brainwaves vary a lot more and average about 40 Hz, which is the fifth harmonic of 8 Hz, so the application of an 8 Hz magnetic pulse on the left forehead may approximate the more involved electrode placement over the forehead and skull. This is accomplished with the EM Pulser 78 placed on the left forehead above the eye with the same Velcro strap.

For those who already have the EM Pulser 78 you are invited to let us know if this additional use for improving memory helped you.

Improvements to the EM Pulser Model 78

We are happy to report that we have improved the EM Pulser 78 so that you can **add accessories**.

The end panel contains a jack for plugging in a flat magnetic coil **PulsePad** (see in Accessories section) so you can treat any area of the body with a flat pad wired to the left-hand side jack, as well as other ones.



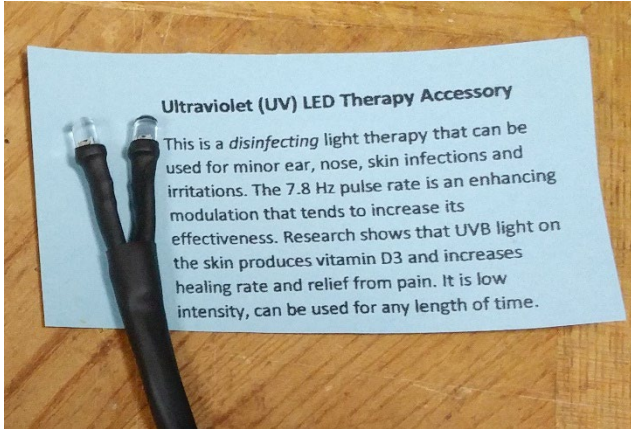
The new LED shown above is a dual color LED with a faint green light when on. It will also have a red light as well, becoming more brighter as the battery voltage keeps getting lower, below 6 volts.



Accessories: IRI is also offering a single pencil-style **Magnetic Coil Probe** with the same coil from inside the EM Pulser but attached to a wire cable to plug into the same jack for you to pinpoint a particular area for treatment. Shown here are the light therapy options with **red/infrared (IR)** and **ultraviolet (UV)** probes, as well as the **PulsePad**, all of which plug into the same jack. See BioenergyDevice.org for updates on these and other newly added accessories to make your EM Pulser 78 experience more versatile and useful. For example, a set of microcurrent sterling silver accessory electrodes may be available soon too.

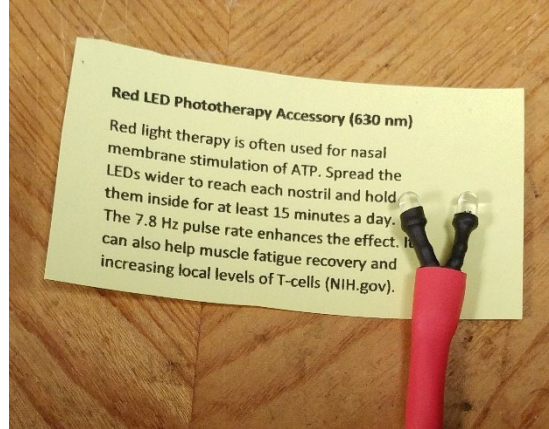
The **Magnetic Coil Handheld Probe Accessory** can be used with or without the extension cord that is also included with the **Accessories Combo Package**. The external Magnetic Coil Probe Accessory is shown plugged into the EM Pulser jack, as it disconnects the internal magnetic coil of the EM Pulser 78 but allows the freedom to pinpoint a small area for treatment.





Ultraviolet (UV) LED Therapy Accessory

This is a *disinfecting* light therapy that can be used for minor ear, nose, skin infections and irritations. The 7.8 Hz pulse rate is an enhancing modulation that tends to increase its effectiveness. Research shows that UVB light on the skin produces vitamin D3 and increases healing rate and relief from pain. It is low intensity, can be used for any length of time.



Red LED Phototherapy Accessory (630 nm)

Red light therapy is often used for nasal membrane stimulation of ATP. Spread the LEDs wider to reach each nostril and hold them inside for at least 15 minutes a day. The 7.8 Hz pulse rate enhances the effect. It can also help muscle fatigue recovery and increasing local levels of T-cells (NIH.gov).

While the **UV LED Therapy Accessory** mentioned above is self-explanatory, the **Red LED Phototherapy Accessory** of 630 nm wavelength may be less understood. Besides improving eyesight if shown near the eyes for 3 minutes in the morning, activating the immune system killer T-cells in the skin is possible.

[J Nippon Med Sch. 2006 Apr;73\(2\):75-81.](#)

Light-emitting diode phototherapy at 630 +/- 3 nm increases local levels of skin-homing T-cells in human subjects.

[Takezaki S¹, Omi T, Sato S, Kawana S.](#)

Further discoveries involve rejuvenating the skin with such red light exposure in this magical wavelength range.

Andrei P. Sommer, Dan Zhu. Green Tea and Red Light—A Powerful Duo in Skin Rejuvenation. *Photomedicine and Laser Surgery* **2009**, 27 (6) , 969-

971. <https://doi.org/10.1089/pho.2009.2547> The author Sommer also indicates an anti-cancer effect as well and surprisingly, such a dual LED design as our **Red LED Accessory** can also be used in the nasal passage for “turbocharging” ATP production, healing and anti-aging effects, as well as sinus benefits.

Another great application of the Red LED photobiomodulation is to shine both LEDs into the nose – irradiating the sinus passages. The benefit of red light rhinophototherapy in the nasal sinuses reduces allergic rhinitis as [published in the Int. J. Otolaryngol., 2018](#) and posted on the National Institute of Health Library of Medicine website. The study involved a single 15 minute treatment with dual 40 mW LEDs so the IRI Red LED Accessory may need a longer exposure to equal this more intense dosage.

Another finding helps reverse aging: “Skin photorejuvenation effects of light-emitting diodes (LEDs): a comparative study of yellow and red LEDs invitro and invivo”, Oct. 2016 · *Clinical and Exper. Dermatology* 41(7):798-805, DOI:10.1111/ced.12902

Below is a **digital oscilloscope image** of the output of the EM Pulser 78 showing the remarkably sharp pulse shape with fast rise time on the nanosecond time scale with 132 ms period. Taking the inverse gives the frequency ($F = 1/P$) of the pulse rate, which is around 7.7 Hz, within 2% of the target 7.8 Hz Schumann resonance.

Thank you for becoming a valued customer and proud owner of the new EM Pulser 78. Dr. Glen Gordon originally designed his EMPulse to have an 8 Hz pulse rate and we are happy to comply with his design.

The rest of this User Manual has reference material which will help your understanding.



SCIENTIFIC REPORTS

OPEN

Cardioprotection from stress conditions by weak magnetic fields in the Schumann Resonance band

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The Schumann Resonances (ScR) are Extremely Low Frequency (ELF) electromagnetic resonances in the Earth-ionosphere cavity excited by global lightning discharges. This natural electromagnetic noise has likely existed on the Earth ever since the Earth had an atmosphere and an ionosphere, hence surrounding us throughout our evolutionary history. The purpose of this study was to examine the influence of extremely weak magnetic fields in the ScR first mode frequency range on the spontaneous contractions, calcium transients and Creatine Kinase (CK) release of rat cardiac cell cultures. We show that applying 7.8 Hz, 90 nT magnetic fields (MF) causes a gradual decrease in the spontaneous calcium transients' amplitude, reaching 28% of the initial amplitude after 40 minutes of MF application, and accompanied with a gradual decrease in the calcium transients' rise time. The mechanical spontaneous contractions cease after the ScR fields have been applied for more than 30 minutes, when the calcium transient's amplitude reached ~60% of its initial value. The influence of the ScR MF was reversible, independent of the field magnitude in the range 20 pT-100 nT, and independent of the external DC magnetic field. However, the effect is frequency dependent; the described changes occurred only in the 7.6–8 Hz range. In addition, applying 7.8 Hz, 90 nT MF for 1.5 hours, reduced the amount of CK released to the buffer, during normal conditions, hypoxic conditions and oxidative stress induced by 80 μM H₂O₂. We show that the ScR field induced reduction in CK release is associated with a stress response process and has a protective character.

During our everyday life, we are surrounded by natural and manmade electromagnetic noise in a wide range of frequencies and magnitudes. The manmade electromagnetic noise is relatively new and many efforts have been made to understand its interaction with biological systems^{1–3}. Natural electromagnetic noise, on the other hand, exists since the early days of Earth, thus surrounding us throughout our evolutionary history⁴. However, its influence on biological systems was poorly studied, mainly due to the low magnitude of these fields and thus lack of interest. One of the natural ELF signals is the lightning-produced Schumann Resonance (ScR). The ScR exhibit well-defined frequency peaks defined by the Earth circumference, at $f_1 = 7.8$ Hz, $f_2 = 13.9$ Hz, $f_3 = 20$ Hz, with a magnetic field intensity of a few pT⁵. The human body also produces weak alternating electromagnetic fields in the ELF range generated by excitable cells. Rat cardiomyocytes generate 1–10 Hz rhythm with a magnetic field magnitude of about 50 pT⁶. The purpose of this research was to examine the influence of the natural, frequency specific, ScR signal on rat cardiomyocyte cultures and to examine the coupling between these two natural ELF fields.

The ability of a cardiomyocyte to contract depends on the proper operation of many biological processes. Calcium ion transients are the key mediators between the mechanical contractions and the cardiac action potentials which initiate the contractions. The calcium influx and the calcium release from the Sarcoplasmic Reticulum (SR) in phase 2 of the action potential increases the free calcium concentration in the cytoplasm. This free calcium triggers the physical contraction mechanism. We therefore examined the ScR MF influence on the mechanical contractions and their triggering calcium transients as a basis for a more thorough investigation. In addition, in order to examine whether the impact is of a protective or a destructive nature, we examined the influence of ScR MF on CK release during normal, hypoxic and oxidative stress conditions. The dependency on the MF

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Does Schumann resonance affect our blood pressure?

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Abstract

Objectives—To investigate whether Schumann resonance (SR) affects blood pressure (BP), heart rate (HR), and depression and, if so, whether the putative BP reactivity to SR (BPR-SR) is associated with health-related lifestyle (HLS), disease-related illnesses (DRI), and depression.

Methods—A sample of 56 adults in Urausu, Hokkaido, Japan, wore an ambulatory BP monitor, except for the time in the shower, for seven consecutive days. They completed the Geriatric Depression Scale-Short Form and a health survey questionnaire on HLS and DRI. Group mean differences and within-individual differences in systolic (S) and diastolic (D) BP, mean arterial pressure (MAP), double product (DP), and HR were, respectively, compared between normal and enhanced SR days, using Student's t-test. Correlations between BPR-SR and other characteristics (i.e. age, gender, HLS, DRI, subjective health, and depression) were analyzed, using Pearson's product moment correlation.

Results and discussion—Group mean SBP, DBP, MAP, and DP for enhanced SR days were lower than those for normal days ($P = 0.005-0.036$). DRI was negatively associated with BPR-SR in SBP, DBP, MAP, and DP ($P = 0.003-0.024$), suggesting a better health status for those who showed lower BP on enhanced SR days. HLS was negatively associated with BPR-SR in DBP and MAP ($P = 0.016-0.029$). Males showed higher BPR-SR in DBP and MAP than females ($P = 0.0044-0.016$). Neither subjective health nor depression was significantly associated with BPR-SR. Future studies based on larger sample sizes are planned to see whether possible health effects can be generalized.

Keywords

Schumann resonance; Geomagnetic; Blood pressure; Depression; ELF

1. Introduction

Cases for linking changes in the ambient magnetic field to observable changes in higher life form can be found in the scientific literature. For instance, geomagnetic storms have been found to be accompanied by degradation and destruction of mitochondria and loss of the circadian rhythmicity in the heart rate of rabbits [7]. Because the magnetoreception of neural structures should be evolutionarily adjusted to these magnetic fields, humans may also have a special sensitivity to geomagnetic fields [22]. In fact, scientific literature suggests that ambient electromagnetic fluctuations, such as geomagnetic activity, may affect our physiology, psychology, and behavior [1–8,10–13,19–22,30]. For instance, Ghione et al. [13] found

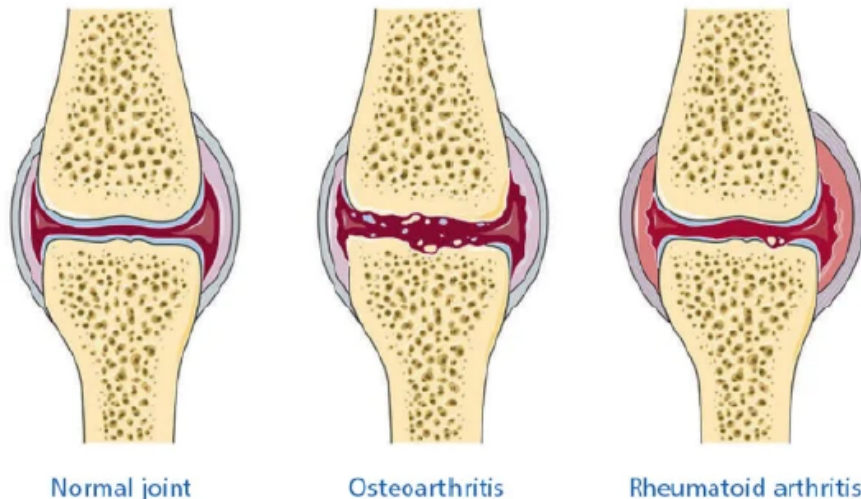
FREE open access article at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2656447/>

Noninvasive Therapy for Cartilage Regeneration

A device that can alleviate cartilage degradation in synovial joints by promoting the growth of new cartilage.

Johnson Space Center, Houston, TX

Osteoarthritis and rheumatoid arthritis



A comparison of healthy and inflamed synovial joints. (Image: NASA)

Innovators at NASA Johnson Space Center researching time-variance magnetic field (TVMF) therapies have developed a pulsed electromagnetic field (PEMF) device that can alleviate cartilage degradation in synovial joints by promoting the growth of new cartilage. Joint disorders result in intense pain. Noninvasive and painless regeneration of a patient's own tissue offers fewer side-effects than surgical joint replacement or tissue engineering procedures. The PEMF device could be wrapped around synovial joints where cartilage-degrading inflammation is located. The device has potential to be used in the treatment of cartilage degenerative joint disorders in patients resulting from rheumatism, trauma, or surgery.

IRI Note: This "discovery" follows on three other NASA patents, going back to 2010, when **Dr. Glen Gordon** found a NASA Study on the reported "nanosecond" pulse rise time PEMF that had remarkable properties for activating the Heat Shock Protein (HSP-70) which promptly stops inflammation and promotes healing of a wide variety of trauma. Thus, the list of benefits for nanosecond PEMF, as found in our EM Pulser 78, OsteoPad, MaxiMat, and MiniMat, continues.

OSTEOARTHRITIS and CARTILAGE

Pulsed electromagnetic fields influence hyaline cartilage extracellular matrix composition without affecting molecular structure

BY HONGXIANG LIU*, JOAN ABBOTT† AND THE LATE JAMES A. BEE*

*Department of Veterinary Basic Sciences, The Royal Veterinary College, Royal College Street, London NW1 0TU, U.K.; and †Electro-Biology, Inc., 6 Upper Pond Road, Parsippany, New Jersey 07054-1079, U.S.A.

Summary

Pulsed electromagnetic fields (PEMF) influence the extracellular matrix metabolism of a diverse range of skeletal tissues. This study focuses upon the effect of PEMF on the composition and molecular structure of cartilage proteoglycans. Sixteen-day-old embryonic chick sterna were explanted to culture and exposed to a PEMF for 3 h/day for 48 h. PEMF treatment did not affect the DNA content of explants but stimulated elevation of glycosaminoglycan content in the explant and conserved the tissue's histological integrity. The glycosaminoglycans in sterna exposed to PEMF were indistinguishable from those in controls in their composition of chondroitin sulfate resulting from chondroitinase ABC digestion. Specific examination with [³⁵S]-sulfate labels showed that PEMF treatment significantly suppressed both the degradation of pre-existing glycosaminoglycans biosynthetically labeled *in ovo* and the synthesis of new [³⁵S]-sulfated glycosaminoglycans. The average size and aggregating ability of pre-existing and newly synthesized [³⁵S]-sulfated proteoglycans extracted with 4 M guanidinium chloride from PEMF-treated cartilage explants were identical to controls. The chain length and degree of sulfation of [³⁵S]-sulfated glycosaminoglycans also were identical in control and PEMF-treated cultures. PEMF treatment also reduced the amount of both unlabeled glycosaminoglycans and labeled pre-existing and newly synthesized [³⁵S]-sulfated glycosaminoglycans recovered from the nutrient media. [³⁵S]-Sulfated proteoglycans released to the media of both control and PEMF-treated cultures were mostly degradation products although their glycosaminoglycan chain size was unchanged. These results demonstrate that exposure of embryonic chick cartilage explants to PEMF for 3 h/day maintains a balanced proteoglycan composition by down-regulating its turnover without affecting either molecular structure or function.

Key words: Pulsed electromagnetic fields, Cartilage extracellular matrix, Proteoglycan, Glycosaminoglycan.

Introduction

CARTILAGE EXTRACELLULAR MATRIX establishes a highly concentrated gel of proteoglycan immobilized within a dense network of collagen fibrils [1]. Proteoglycans are high molecular weight molecules composed of a core protein to which a large number of negatively charged and extremely hydrophilic glycosaminoglycan chains are attached covalently. Under normal physiological conditions sulfated proteoglycans interact with hyaluronic acid through one end of the protein core to form large multimolecular aggregates [2-4]. The high concentration and extreme hydrophilicity of proteoglycan aggregates create swelling pressure within the extracellular matrix which is constrained by a relatively inextensible collagen

network. The association between proteoglycans and collagens provides articular cartilage with the unique physical properties of reversible compressibility and tensile strength enabling it to both withstand mechanical stress and protect underlying bone [5]. Loss of proteoglycan associated with osteoarthritis results in a disruption of cartilage integrity and an inevitable loss of biomechanical function [6]. Maintenance and/or restoration of a functional extracellular matrix is of significant interest to the repair of damaged cartilage.

Pulsed electromagnetic fields (PEMF) promote fracture healing and are widely applied to the successful clinical treatment of delayed- or non-union fracture in patients [7-12]. Although the biological mechanism of action of electrically induced osteogenesis is unclear, PEMF is generally thought to stimulate endochondral ossification by initiating a series of events in cartilage. Considerable evidence has accumulated indicating that PEMF affects the cytodifferentiation and phenotypic expression of cartilage *in vitro* [13-15] and

Submitted 21 November 1994; accepted 30 August 1995.

This work was supported by grants from Electro-Biology, Inc., Upper Pond Road, Parsippany, NJ 07054-1079, U.S.A.

Address correspondence to: H. Liu, Department of Veterinary Basic Sciences, The Veterinary College, Royal College Street, London NW1 0TU, U.K.

Integrity Research Institute's Position Paper on Prostate Alternatives for BPH

Dr. Norm Shealy <https://normshealy.com/> recommends men over 50 should be taking 160 mg of saw palmetto four times a day. There are other formulations which enhance the effect on BPH such as <http://www.lef.org/vitamins-supplements/item01790/PalmettoGuard-Saw-Palmetto-Nettle-Root-Formula-with-Beta-Sitosterol.html?source=search&key=prostate> from Life Extension foundation (LEF.org). However, prescription therapies work very well to reduce prostate size and permit urination flow, such as Proscar and Avodart. www.lef.org has a review article comparing these two drugs in the Dec. 2013 issue of *Life Extension magazine*. **They also have a wonderful, FREE health advisory line 800-226-2370.**

As far as the new PEMF treatment article from 2014 for promoting the Magcell Vetri, we subscribe to Dr. Glen Gordon's discoveries about PEMF, as outlined in the IRI book, *Bioelectromagnetic Healing* and online www.BioenergyDevice.org. Basically it is not the 2,000 gauss field that is doing the work at the ELF pulse rate but more importantly, it is the slope or derivative of the pulse. Dr. Gordon also spoke at our COFE in 2006 and emphasized the "nanosecond risetime" of his NASA-developed EMPulse (see attached).

What we at IRI did, along with a great electronics shop who now manufactures them for us, was to keep the nanosecond risetime, increase the pulse rate to 250 Hz and slightly increase the pulse height to around 70 gauss but at a low 12% duty cycle, so the average magnetic field delivered is only about 7 gauss as a result. If some still feel that more is better, our frequency is about 10 times than the Magcell Vetri so we deliver 10 times the impact within the same amount of time. Also, the treatment time is usually about fifteen (15) minutes to thirty (30) minutes but can be much longer if needed, as the heat shock proteins (HSP 70) are drawn to the site within ten (10) minutes according to Gordon.

We also have a great rechargeable battery (and a free charger) with the EM Pulser along with a 30 day money back guarantee. The reports have been coming in saying that this unit is as good or better than the older EMPulse. Visit www.BioenergyDevice.org for more info and a full page of testimonials. Some clients also use our Premier Jr. on the **prostate perineum** area as well with good results (I have as well and obtained relief within minutes that lasts for days).

In researching BPH treatments, we have learned of a 2014 dog study in which PEMF successfully **reduced prostate size by 57% in 3 weeks!** Clearly, this is the way to go before trying surgery. (<http://www.parsemusfoundation.org/new-treatment-for-enlarged-prostate/>) . Another overseas model was used in Magcell Vetri study (<http://www.vetri-line.de/index.php?id=414>, exhibiting a magnetic field of "max 200 mT" which is 2000 gauss but cannot possess a nanosecond rise time with such a high intensity field. This is the same intensity field used in a 2010 PEMF leukemia cell study which caused increased leukemia cell death after a 12-hour stimulation (J. App. Phys., 107, 09B306, 2010). IRI recommends Dr. Gordon's philosophy of a weaker intensity but faster risetime for maximum efficacy to reduce inflammation and stimulate HSP 70, the active agent for healing.

Thomas F. Valone, PhD, PE

None of these statements have been evaluated by the FDA. This product is not intended to diagnose, treat, or cure disease.



Original Article

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Effect of pulsed electromagnetic field therapy on prostate volume and vascularity in the treatment of benign prostatic hyperplasia: A pilot study in a canine model

1. Raffaella Leoci^{1,*},
2. Giulio Aiudi¹,
3. Fabio Silvestre¹,
4. Elaine Lissner² and
5. Giovanni Michele Lacalandra¹

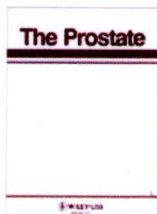
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Issue



The Prostate

Volume 74, Issue 11, (/doi/10.1002/pros.v74.11/issuetoc) pages 1132–1141, August 2014



(http://www.altmetric.com/details.php?domain=onlinelibrary.wiley.com&citation_id=2458790)

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9/22/2015

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<https://www.brmi.online/post/2019/09/20/schumann-resonances-and-their-effect-on-human-bioregulation>



Feb 7

Schumann Resonances and their Effect on Human Bioregulation

The Schumann resonances (or frequencies) are quasi-standing electromagnetic waves that exist in the cavity (or space) between the surface of the Earth and the ionosphere. In 1952, German physicist Professor Winfried Otto Schumann of the Technical University of Munich began attempting to answer whether the Earth itself has a frequency – a pulse. His assumption about the existence of this frequency came from his understanding that when a sphere exists inside another sphere, electrical tension is created. Since the negatively charged Earth exists inside the positively charged ionosphere, there must be tension between the two, giving the Earth a specific frequency. Through a series of calculations, he was able to deduce a frequency he believed was the pulse of the Earth-ionosphere space. Two years later, in 1954, Schumann and Herbert König reported reliable and predictable frequencies in the atmosphere that existed in the cavity (or space) between the surface of the Earth and the ionosphere. Though several frequencies occur between 6 and 50 cycles per second, the fundamental frequency they found to be 7.83 Hz.¹

This "cavity" is naturally excited by energy from lightning discharges and radio atmospheric signals or sferics. (A sferic is a broadband electromagnetic impulse that occurs as a result of natural atmospheric lightning discharges.) This causes the Earth-ionosphere cavity to "ring" like a bell at specific frequencies, resulting in peaks in the noise spectrum. Schumann resonances are not measurable all the time but have to be "excited" to be observed. They are primarily related to electrical activity in the atmosphere, particularly during times of intense lightning activity. At any given moment, about 2,000 thunderstorms roll over Earth, producing some 50 flashes of lightning every second. Each lightning burst creates electromagnetic waves that begin to circle around Earth captured between Earth's surface and a boundary about 60 miles up. Some of the waves - if they have just the right wavelength - combine, increasing in strength, to create a repeating "atmospheric heartbeat" known as Schumann resonance. This resonance provides a useful tool to analyze Earth's weather, its electric environment, and to even help determine what types of atoms and molecules exist in Earth's atmosphere.²

SUMMARY OF HEAT SHOCK PROTEIN (HSP70) FUNCTION AND BENEFITS

Edited by Thomas Valone, PhD, PE

Introduction

Ref.: Wikipedia <https://en.wikipedia.org/wiki/Hsp70>

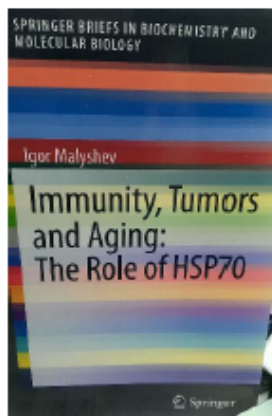
This vital protein is cited by Dr. Glen Gordon as being drawn to an area of the body by nanosecond PEMF, is amazing in that it seems to have intelligent intervention that overrides less desirable response functions of the human body, especially in avoiding the inflammation that accompanies trauma in any form. It originally was identified by its ability to protect cells in the case of rapidly increasing heat exposure. For example, one article emphasized, "Animals with higher heat-shock protein levels can thrive in triple-digit temperatures." Furthermore, we find that "Hsp70 proteins can act to protect cells from thermal or oxidative stress." Oxidative stress is a fancy way of describing free radical damage. Thus, HSP 70 is also regarded as a "chaperone" protein, which also helps protect against "stress-induced apoptosis" which is self-destructive cell death (Mosser, 2000).

Wikipedia tells us: Members of the Hsp70 family are very strongly upregulated¹ by heat stress and toxic chemicals. Hsp70 also aids in transmembrane transport of proteins. Hsp70 seems to be able to participate in disposal of damaged or defective proteins. Finally, in addition to improving overall protein integrity, Hsp70 directly inhibits apoptosis.

Health Benefits of Heat Shock Proteins

by Puya Yazdi, M.D. <https://selfhacked.com/blog/heat-shock-proteins-hsp70-increase-decrease/>

1. Heat Shock Proteins Act as Chaperones
2. HSPs Prevent Cell Death
3. HSPs Play A Role in Immune Response
4. HSPs Make Sure Steroid Hormone Receptors Function
5. HSPs Protect the Heart
6. Heat Shock Proteins May Help Prevent Diabetes



One recommended reference paperback is the Malyshev book pictured here on the effect of HSP70 on tumors and immunity. Other references listed in the Bibliography include an article on inhibiting motor and sensory neuron degeneration (which means that stimulating HSP70 to a site may reverse nerve damage perhaps. (Tidwell, Houenou, & Tytell, 2004). Another one talks about preventing skeletal muscle atrophy, which we all need as we get older (Senf, Dodd, McClung, & Judge, 2008). A third citation indicates how HSP70 can have beneficial effects on Parkinson disease, Alzheimer's, cerebral ischemic injury, and even in the immune response to multiple sclerosis (Turturici, Sconzo, & Geraci, 2011). One more interestingly offers protection against tumor necrosis factor (TNF) which can be lethal. The authors used heat shock (HS) to attract HSP70 to the organ being tested for the antitumor protocol (Molle, et al., 2002).

Hopefully, this information will help the reader appreciate the wide range of HSP70 effects and benefits. In addition, the subsequent articles by Dr. Gordon in this manual shows that HSP70 may also be

¹ Upregulate means to support, catalyze, and encourage biophysically and biochemically. – Ed. Note

stimulated and attracted toward a particular site in the body to benefit and repair cellular tissues, primarily in that area targeted by nanosecond rise time PEMF.

Foods and Supplements That Increase HSP70

- [Broccoli sprouts](#)/Sulforaphane (Zhang, 2011)
- Extra Virgin Olive Oil (Menendez, 2013)
- [Zinc](#) (Putics, 2008)
- [Curcumin](#) (Shen, 2007)
- [Resveratrol](#) (Han, 2012)
- Blueberry (Galli, 2005)
- Graviola (Moghadamtousi, 2015)
- Lavender Essential Oil (Huang, 2012)

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In Danger of Having a Heart Attack? Speed Recovery Before It Happens

Monday, May 05, 2008 by: Glen Gordon MD

[See all articles by this author](#)

Learn more:

http://www.naturalnews.com/023165_trauma_injury_surgery.html#ixzz1icFAbmZq

A perfect example of designed trauma, surgery will be redefined by energy medicine *if* used wisely *before* the incision is made. Few surgeons know of this advance even though designed electromagnetic pulsed therapy (DEPTH) devices are FDA approved in plastic surgery to diminish pain and swelling, the tip of the iceberg for this revolutionary therapy and its ability to reduce pain and increase healing postoperatively.

DEPTH can be employed hours to several days before surgery to stimulate wound healing by increasing DNA's output by restorative genes. Trauma and surgery share a common pathway to tissue death known as ischemia-reperfusion injury and robust evidence exists to show that DEPTH protects tissues against cell death better than any drug available today. Whether cutting a vessel as in surgery or closing it off in stroke or heart attack, they share common issues with trauma where compression or swelling also shuts off blood supply. Bottom line: most bad events we experience are associated with loss of blood supply and formation of chemicals known as free radicals, which is gradually followed by re-supply of blood or reperfusion that can cause even more widespread mayhem, i.e. the reperfusion sweeps the free radicals into the vascular system.

Free radicals can mean death to organs remote from the injury like the brain or heart if they are returned to the circulation too rapidly. In something of a "damned if you do, damned if you don't", the lethal ability of free radicals is starkly represented by a young combat trauma surgeon's experience in Iraq that I recently heard, "these guys code on us (die) just about the time we seem to be getting them back". We must stabilize these dangerous chemicals before they are released into the circulation, which drugs can't do because drug delivery to tissue with no blood supply is an oxymoron; you can't get there from here! DEPTH technology, which uses low frequency RF signals speeds the neutralizing energy into any space or depth like the body isn't there.

Protecting against civilian trauma is one aspect of DEPTH, but imagine protecting soldiers from combat trauma *before* the battle with a single 20-30 minute treatment. If

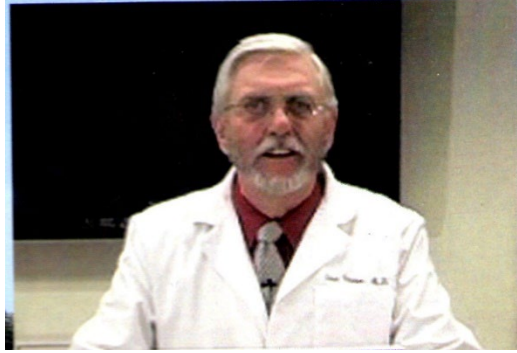
they are injured, we repeat 20-30 minute treatments every 2-3 hours after injury to chemically stabilize them as they await care in advanced trauma care centers. While our sons and daughters are seen with amazing speed in Iraq, they receive only symptomatic treatment including fluids for blood loss, and little to none to stop the underlying free radical chemical changes that destabilize and stun their organs and tissues that kills them.

Free radicals are called "oxidants" and DNA produces protein antioxidants to stop them, e.g. superoxide dismutase, catalase, and peroxidase; "ase" tells us these are enzymes and proteins, and DEPTH technology can flood them with energy and information at any depth in the body to put them into overdrive to convert these killer chemicals to water and carbon dioxide, which is where they were meant to go before the wheels came off... DEPTH does this so well that two highly respected investigators at Stanford University calculated it could increase antioxidant efficiency a hundredfold, and the sooner applied the better the results.

Along with other scientists, Dr. Reba Goodman and I stimulated Heat Shock Protein 70, spoken of as a "chaperone protein" because it protects cells from dying in Ischemia-reperfusion (I-R) injury. A perfect example of I-R injury is a large vessel heart attack like the Left Anterior Descending artery, which deprives such a large part of the heart of its blood supply that it is called "The Widowmaker" and carries a mortality rate of 80-90% in nearly all mammal species. A group of Dr. Goodman's colleagues treated white rats just before tying off the above artery and only 20% of them died. Can you imagine what that could mean to the 60% of victims who are reported not to have completed their heart attack when they first receive medical attention?

Another killer is stroke, which has a similar final pathway to tissue death as does traumatic brain injury and spinal cord injury. Neurosurgeon Dr. Gary Steinberg and colleagues of Stanford University salvaged 70% of brain tissue in rabbits that was lost without treatment, only this time treatment started immediately *after* tying off the middle cerebral artery, a killer in any language. Once again, we see the fallacy of using drugs that would do little even if they could be delivered, and the beauty of DEPTH technology that can save cells from dying anywhere in the body including through the skull. Remember also, World Health Organization convened a council of scientists from around the world to review the safety of DEPTH technology and they reported it "free of adverse side effects".

Having completed this side trip through heart attack and stroke where safe, non-invasive DEPTH technology holds immeasurable value, let's revisit wound healing. Acute wounds, which heal best include fractures and incisions, but chronic skin ulcers and non-union fractures, which fail to heal for months, also respond. Acute fractures and incisions heal 4-6 times faster with appropriately designed electromagnetic pulsed therapy, which is spelled out to showcase the difference between effect and efficacy. The better the pulse design, the faster the healing and the greater the tensile strength of the wound. Appropriately treated and tested, differences in wound strength and rate of healing are apparent on day three after an incision, and with appropriate pulse design fractures within the ankle are reported healed in under two weeks.



The devil is in the details of "appropriate" design. Scientists include the craziest frequencies and field strengths in their studies and then trumpet, "See, I told you this was all smoke and mirrors". The Danes are a very pragmatic lot, and two Danish engineers compared three vital pulse components between successful and failed studies. No surprise, they reported there was no comparison. Buyers beware; know what you are buying and *demand* a money back guarantee. If a manufacturer won't stand behind his product, you probably don't want to stand in front of it.

About the author

Considered a senior scientist in the field of pulsed electromagnetic field technology Dr Gordon speaks internationally on this topic. Beginning in 1980, he has accumulated the largest clinical experience in the United States in treating human illness and injury. An admirer of Rachel Carson, author of *Silent Spring*, Dr Gordon agrees with her that, "man made solutions imposed upon the natural balance of things diminish the experience of mankind". He sees drugs and surgery reflective of such man-made solutions and has been a pioneer in establishing the universal force of electromagnetism as "the natural balance of things" in tissue restoration after injury and illness.

Learn more:

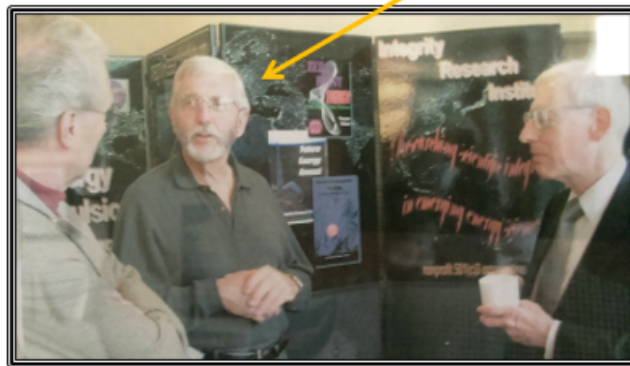
http://www.naturalnews.com/023165_trauma_injury_surgery.html#ixzz1icEzcF73

- Swelling
- Cuts/Bruises
- Neuropathy
- Sciatica
- Tendonitis
- Arthritis
- Backache
- Bites/Stings

Select from this list to review PEMF medical studies for off-label applications:

COSTOCHONDRITIS
 LOW BACK PAIN
 MUSCLE LOSS
 MUSCULOSKELETAL INJURIES
 NECK PAIN
 NON-UNIONS
 OSTEOARTHRITIS
 OSTEOPOROSIS
 PSEUDOARTHROSIS
 SMALL/LARGE JOINT ARTHRITIS
 TENDONITIS
 WHIPLASH
 BOWEL SURGERY
 ENDOMETRIOSIS
 ERECTILE DYSFUNCTION
 GENERAL SURGERY

Below is **Dr. Glen Gordon** explaining his invention at our conference in front of the IRI exhibit booth to scientists from NASA.



Journal References Supporting the IRI EM Pulser 78 Design (7.8 Hz)

Note: Most of these great articles are open access so they can be downloaded for free

[Cardioprotection from stress conditions by weak magnetic fields in the Schumann Resonance band](#)

Nature Scientific Reports, (2019) 9:1645

“We show that applying 7.8Hz, 90nT magnetic fields (MF) causes a gradual decrease in the spontaneous calcium transients’ amplitude.... However, the effect is frequency dependent; the described changes occurred only in the 7.6–8Hz range...**We show that the Schumann Resonance field induced reduction in Creatine Kinase release is associated with a stress response process and has a protective character.**”

[Long-Term Study of Heart Rate Variability Responses to Changes in the Solar and Geomagnetic Environment](#)

Nature Scientific Reports, (2018) 8:2663

“Overall, the study confirms that daily Autonomic Nervous System activity responds to changes in geomagnetic and solar activity during periods of normal undisturbed activity and it is initiated at different times after the changes in the various environmental factors and persist over varying time periods....Increase in cosmic rays, solar radio flux, and **Schumann resonance power** was all associated with increased HRV and parasympathetic activity”

[Does Schumann resonance affect our blood pressure?](#)

Biomedicine & Pharmacotherapy, Volume 59, Supplement 1, October 2005, Pages S10-S14

“Disease-Related Illnesses [were] **negatively associated** with Blood Pressure Reactivity to Schumann Resonance (BPR-SR)...suggesting a better health status for those who showed lower BP on enhanced SR days. Males showed higher BPR-SR...than females (P=0.004–0.016).”

[Does exposure to extremely low frequency magnetic fields produce functional changes in human brain?](#)

Basic Neurosciences, Genetics and Immunology, Feb. 3, 2009

“Behavioral and neurophysiological changes have been reported after exposure to extremely low frequency magnetic fields (ELF-MF) both in animals and in humans... The increase in paired-pulse facilitation...suggests that PEMFs exposure may produce an **enhancement in cortical excitatory neurotransmission**. This study suggests that PEMFs may produce functional changes in human brain.”

[Electromagnetic Forces and Life Processes](#)

Technology Review, December 1972, Robert O. Becker (author of *The Body Electric*)

“The concept that electromagnetic forces might have any effect upon living organisms-other than the thermal effect due to Joule heating was for many years rejected by the organized biomedical community. But under the weight of experimental evidence this attitude is changing; indeed, the medical community is now expressing **considerable interest in the possible therapeutic effects** of direct application of small amounts of electrical energy.”

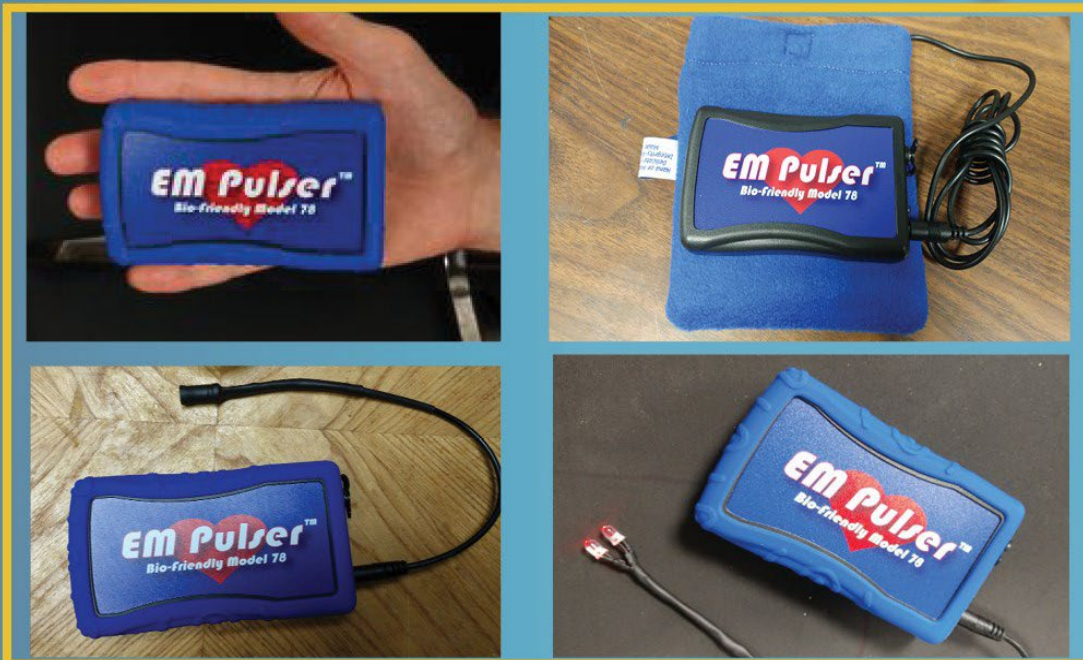
[Long-lasting, dissociable improvements in working memory and long-term memory in older adults with repetitive neuromodulation](#)

Nature Neuroscience | VOL 25 | September 2022 | 1237–1246 | www.nature.com/natureneuroscience

“The development of technologies to protect or enhance memory in older people is an enduring goal of translational medicine. Here we describe repetitive (**4-day**) transcranial alternating current stimulation (tACS) protocols for the selective, **sustainable enhancement of auditory–verbal working memory and long-term memory** in 65–88-year-old people.”

EM Pulser Model 78

Now with Attachments that Plug in!

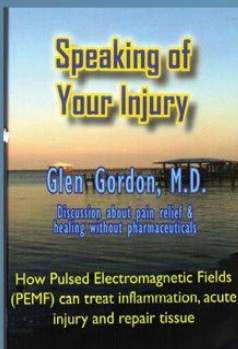


The EM Pulser Model 78 has the low earth pulsed frequency magnetic fields (PEMF) of 7.8 Hertz and IRI's super fast 25 nanosecond rise time which easily pass through your body to heal deep injury and relieve pain. The NASA Study* showed that PEMF heal your body without side effects. Now the EM Pulser has a port so you can plug in the new accessories : PulsePad, Red LED Phototherapy (630 nm) Ultraviolet (UV) LED Therapy and the Magnetic Probe for targeted therapy. FREE AC ADAPTER/RECHARGER that plugs in your outlet and ONE LI ON RECHARGEABLE BATTERY so you can use anywhere. The AC Adapter/recharger is especially designed to charge your battery when unit is turned off. So you always have power in your device.

\$295 EM Pulser, AC adapter/recharger, rechargeable battery Articles, Gordon DVD

\$375 EM Pulser w/ PulsePad ,AC adapter/recharger, rechargeable battery, Gordon DVD

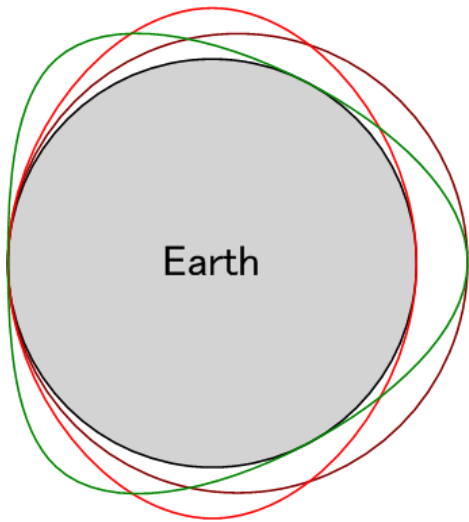
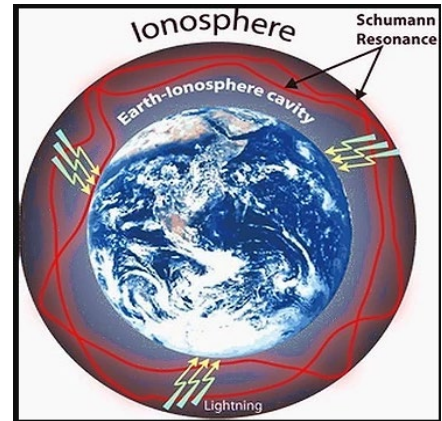
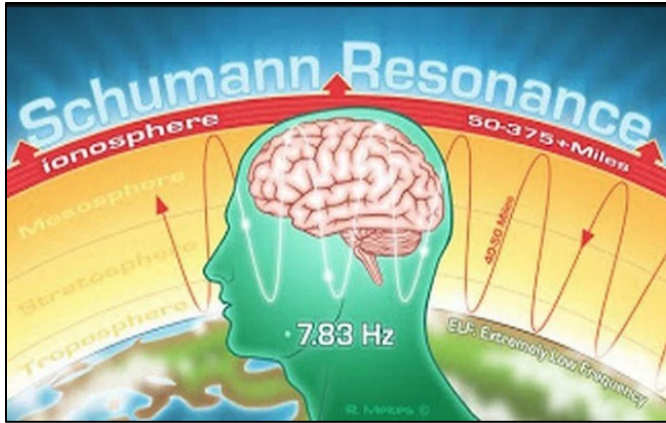
\$425 EM Pulser Combo W/ PulsePad, Magnetic, UV, LED probes, AC adapter/recharger.



You can also purchase the Em Pulser (\$295) with one of the Attachments:
Magnetic Probe: \$35 UV LED \$35 and Red LED :\$35

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BioenergyDevice.org



- fundamental mode (7.83Hz)
- second order (14.1Hz)
- third order (20.3Hz)

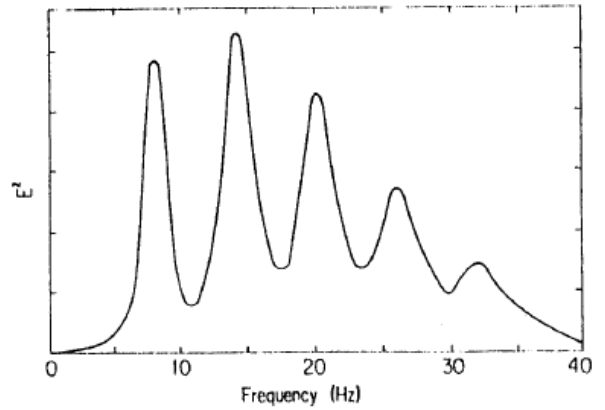


Fig.2 Schumann resonances for the vertical electric field