

PyraLight <<Pyramid>> research
Guy Harriman
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Total Body Wellness

Summary:

The PyraLight is a unique combination of pulsed near Infra Red (650nm) and Magnetic Induction. The three modulating frequencies (40Hz, 8Hz, and 2Hz) used in the PyraLight pad system are superpulsed together. The 40Hz Gamma EEG frequency is observed when left and right hemispheres are working together in coherence. Schumann resonance frequency (around 7.8 Hz) is on the border between Theta EEG band (4Hz – 8 Hz) and Alpha EEG band (8H-12Hz). The low Delta EEG frequency of 2Hz is found in deep meditation and sleep, and enhances gut microbiome serotonin production.

Typically there are two types of devices designed for different effects on the body. One class is pulsed infra red, which includes laser diodes as well as LEDs. The 650nm dual laser nasal light cord in the PyraLight Bundle (available on PyraLight.com) is a great example of this. The nasal light plugs into the PyraLight 1/4inch output jack on the pad, and is modulated along with the magnetic field and IR leds on the pad. The nasal light has had much research done on it in China over the last 10 or more years, showing the benefits after heart attack, dementia and stroke. Nerve regeneration following trauma has been demonstrated as well. Another type of light therapy (also called photobiomodulation) device are simple arrays of LEDs placed on the body using a flexible rubber pad structure.

The other class of devices are PEMF (pulsed electromagnetic fields). There are a number of magnetic mats available over the last 20 years. The main use of the magnetic mats is for pain relief, and there is plenty of supporting evidence for this.

The magnetic mats are large and heavy. They use copper coils to deliver the magnetic field. They are expensive to produce, and not flexible. The mats may be folded or rolled to pack, but this makes them subject to failure where the folds are. The effects are subtle, and typically are designed to run for less than 20 minutes.

The PyraLight is a PYRAMID design -

Pulsed Infra Red And Magnetic Induction Device

This creates a unique combination of Yang Chi pulses (near Infra Red) and Yin Chi magnetic induction pulses. Combining yang and yin chi pulsed stimulation harmonizes the subtle fields in the body. Source energy (dark field energy, cold plasma, the akasha, the dreamtime) is both Yang Chi and Yin Chi. These are the electrical and magnetic aspects of the chi, the chi or dark field energy being the unified field postulated by Einstein and called tachyons by Tesla. Light is part of the spectrum of electro magnetic waves. As the PyraLight includes both electrical and magnetic vibration, it reconnects the water and cells in the body to Source energy in a harmonious way.

The early experiential results with the PyraLight have been very encouraging. They include improved prostate health, reduced lower back pain, reduced inflammation, regulation of menstrual cycle, and reduced tooth pain, for example.

Water is structured by light, and magnetic memory in polluted water is removed by magnetic fields. The research by Gerald Pollack on Exclusion Zone Water (the 4th state of water, which is like a charged gel) showed that light dramatically increased the size of the EZ, which increases the charge in the EZ water. This EZ charge has been shown to help push red blood cells through capillaries, improving blood flow and therefore cellular detox.

In experiments placing a glass of water on the pad, it has been repeatedly demonstrated that the water becomes structured, tasting significantly fresher and softer.

Because the body is mostly water (75% by volume, but 99% by molecule count) the structuring of water allows the cells to rehydrate. Cells absorb water molecules through microtubules in the cell membrane. These only allow structured water to enter the interior of the cell. Therefore the long term use of the PyraLight helps rehydrate the inside of each cell.

The PyraLight can be placed under your pillow overnight, or on top of your body, or on your sides. To protect the pad, if you wish to lie directly on top of it, then place a pillow over the pad. Even a thin pillow will be fine

There is no limit to the amount of time you can use the PyraLight in a day. It has a

gentle healing feeling for many people, with some more sensitive people feeling the energy activate old injuries located in the body well away from the site of application.

During early trials of the PyraLight significant results have been seen in clearing a fibromyalgia episode in a few minutes, inducing a late period, clearing thinking, reducing lower back stiffness, reducing number of bathroom visits overnight, clearing pain in cancer and from dental surgery. Each person reacts to the pulsed stimulation in their own way, which indicates the PyraLight is enhancing the natural self healing power of the body.

Some Relevant Supporting Papers on Pulsed Infra Red:

Can Humans Harvest The Sun's Energy Directly Like Plants?

By Gerald Pollack Ph.D.

The energy for building water structure comes ultimately from the sun. Radiant energy converts ordinary bulk **water** into ordered water, building this structured zone. We found that all wavelengths ranging from UV through visible to infrared can build this ordered water. Near-infrared energy is the most capable. Water absorbs infrared energy freely from the environment; it uses that energy to convert bulk water into liquid crystalline water (fourth phase water) — which we also call "exclusion zone" or "EZ" water because it profoundly excludes solutes. Hence, buildup of EZ water occurs naturally and spontaneously from environmental energy. Additional energy input creates additional EZ buildup.

Of particular significance is the fourth phase's charge: commonly negative (Figure 1). Absorbed radiant energy splits water molecules; the negative moiety constitutes the building block of the EZ, while the positive moiety binds with water molecules to form free hydronium ions, which may diffuse throughout the water. Adding additional light creates more charge separation.

<http://www.greenmedinfo.com/blog/can-humans-photosynthesize-1>

From redlighttherapy.lighttherapyoptions.com :

First Aid, Injuries & Pain Relief

When you hear the word “wound”, it might bring to mind a **surgical wound, or a non-healing wound like a bedsore or a diabetic ulcer**. The fact is, we get little wounds every day. Think of the small cuts, scrapes, bruises, insect bites, or burns you might encounter on any given summer day. With bacteria becoming more and more antibiotic resistant, the faster you can close an open wound the less chance you have of a potentially life threatening infection.

Red and infrared light therapy has been shown to close a wound, even non-healing wounds, 200% faster and with less scarring. How?

Red light therapy...

1. **Increases circulation and the formation of new capillaries.** Increased circulation and the formation of new capillaries means the wounded area receives more of the oxygen and nutrients it needs to initiate and maintain the marvelous healing process.

2. **Increases phagocytosis**, or the clean up of dead or damaged cells, including dead bacteria, helping in infection control.

3. **Increases lymph system activity.** This helps to ensure efficient clean up and detoxification of the wounded area without overtaxing the lymph system. Helps in prevention of lymphedema.

4. **Stimulates the production of fibroblasts.** Fibroblasts synthesizes collagen, elastin, and proteoglycans in the final healing phases.

5. **Stimulates the production of collagen**, the key protein involved in wound closure.

6. **Stimulates tissue granulation**, the forming of new connective tissue and tiny blood vessels that form on the surfaces of a wound during the healing process. 7. **Causes the release of ATP, or raw cellular energy.** This provides energy to the damaged and surrounding cells to do what they were designed to do – heal themselves.

Uses:

- bed sores
- burns
- diabetic ulcers
- dermal ulcers
- oral lesions
- surgical wounds
- every day cuts and scrapes
- pressure ulcers
- oral mucositis
- cold sores
- nerve regeneration
- acne
- eczema
- psoriasis
- herpes
- rosacea
- stretch marks

Pain Relief

If your pain is caused by a wound or injury, such as surgery, a sprain, tear or break, first, apply all the benefits of red light therapy listed above, then add the following benefits:

1. Red and Infrared light therapy reduces inflammation.

2. Red and Infrared light therapy blocks or desensitizes the nerves to pain.

Some websites may say that only “specific” wavelengths of light do this, such as 980 nm, but the fact is, the **whole visible range of red light through near infrared energy (700nm – 1100 nm) all have the same benefits.** The only difference? The longer the wavelength, the deeper it penetrates the body.

If your injury or pain is superficial, red light alone will work fine. If your injury or pain goes deep, you want to use the combination of red and infrared light or infrared alone for the treatment of conditions like these:

- back pain
- low back pain
- arthritis
- sciatica
- knee pain
- post surgical procedures
- neck pain
- foot pain (plantar fasciitis)
- carpal tunnel syndrome
- tendonitis
- fibromyalgia
- sprains, tears or bone breaks

Low infra red laser light irradiation on cultured neural cells: effects on mitochondria and cell viability after oxidative stress.

[Giuliani A](#)¹, [Lorenzini L](#), [Gallamini M](#), [Massella A](#), [Giardino L](#), [Calzà L](#).

Author information

Abstract

BACKGROUND:

Considerable interest has been aroused in recent years by the well-known notion that biological systems are sensitive to visible light. With clinical applications of visible radiation in the far-red to near-infrared region of the spectrum in mind, we explored the effect of coherent red light irradiation with extremely low energy transfer on a neural cell line derived from rat pheochromocytoma. We focused on the effect of pulsed light laser irradiation vis-à-vis two distinct biological effects: neurite elongation under NGF stimulus on laminin-collagen substrate and cell viability during oxidative stress.

METHODS:

We used a 670 nm laser, with extremely low peak power output (3 mW/cm²) and at an extremely low dose (0.45 mJ/cm²). Neurite elongation was measured over three days in culture. The effect of coherent red light irradiation on cell reaction to oxidative stress was evaluated through live-recording of mitochondria membrane potential (MMP) using JC1 vital dye and laser-confocal microscopy, in the absence (photo bleaching) and in the presence (oxidative stress) of H₂O₂, and by means of the MTT cell viability assay.

RESULTS:

We found that laser irradiation stimulates NGF-induced neurite elongation on a laminin-collagen coated substrate and protects PC12 cells against oxidative stress.

CONCLUSION:

These data suggest that red light radiation protects the viability of cell culture in case of oxidative stress, as indicated by MMP measurement and MTT assay. It also stimulates neurite outgrowth, and this effect could also have positive implications for axonal protection.

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Effects of near-infra-red laser irradiation on adenosine triphosphate and adenosine diphosphate contents of rat brain tissue.

[Mochizuki-Oda N1](#), [Kataoka Y](#), [Cui Y](#), [Yamada H](#), [Heya M](#), [Awazu K](#).

Author information

Abstract

Low-power, near-infra-red laser irradiation has been used to relieve patients from various kinds of pain, though the precise mechanisms of such biological actions of the laser have not yet been resolved. To investigate the cellular mechanisms by near-infra-red laser on the nervous system, we examined the effect of 830-nm laser irradiation on the energy metabolism of the rat brain. The diode laser was applied for 15 min with an irradiance of 4.8 W/cm². Tissue adenosine triphosphate (ATP) content of the irradiated area in the cerebral cortex was 19% higher than that of the non-treated area, whereas the adenosine diphosphate (ADP) content showed no significant difference. Laser irradiation at another wavelength (652 nm) had no effect on either ATP or ADP contents. The temperature of the tissue was increased by 4.4-4.7 degrees C during the irradiation of both wavelengths. These results suggest that the increase in tissue ATP content did not result from the thermal effect, but from a specific effect of the laser operated at the 830-nm wavelength.

PMID: 11959421

Some Relevant Supporting Papers on Pulsed Magnetics:

Extremely Low Frequency Electromagnetic Fields Facilitate Vesicle Endocytosis by Increasing Presynaptic Calcium Channel Expression at a Central Synapse.

[Sun ZC](#)¹, [Ge JL](#)¹, [Guo B](#)², [Guo J](#)¹, [Hao M](#)¹, [Wu YC](#)¹, [Lin YA](#)¹, [La T](#)¹, [Yao PT](#)¹, [Mei YA](#)³, [Feng Y](#)⁴, [Xue L](#)¹.

Abstract

Accumulating evidence suggests significant biological effects caused by extremely low frequency electromagnetic fields (ELF-EMF). Although exo-endocytosis plays crucial physical and biological roles in neuronal communication, studies on how ELF-EMF regulates this process are scarce. By directly measuring calcium currents and membrane capacitance at a large mammalian central nervous synapse, the calyx of Held, we report for the first time that ELF-EMF critically affects synaptic transmission and plasticity. Exposure to ELF-EMF for 8 to 10 days dramatically increases the calcium influx upon stimulation and facilitates all forms of vesicle endocytosis, including slow and rapid endocytosis, endocytosis overshoot and bulk endocytosis, but does not affect the RRP size and exocytosis. Exposure to ELF-EMF also potentiates PTP, a form of short-term plasticity, increasing its peak amplitude without impacting its time course. We further investigated the underlying mechanisms and found that calcium channel expression, including the P/Q, N, and R subtypes, at the presynaptic nerve terminal was enhanced, accounting for the increased calcium influx upon stimulation. Thus, we conclude that exposure to ELF-EMF facilitates vesicle endocytosis and synaptic plasticity in a calcium-dependent manner by increasing calcium channel expression at the nerve terminal.

Biological Effects of Pulsed Electromagnetic Field (PEMF) Therapy

by Keith R. Holden, M.D.

Introduction

Pulsed electromagnetic field (PEMF) therapy is effective because time-varying or pulsed electromagnetic fields create microcurrents in the body's tissues. These microcurrents elicit specific biological responses depending on field parameters such as amplitude, frequency, and waveform.

The body contains multiple electromagnetic fields with each tissue and organ having a unique electromagnetic signature. Computerized Axial Tomography (CAT) scans and Magnetic Resonance Imaging (MRI) scans take advantage of these unique signatures to create a map of the body's tissues using pulsed electromagnetic fields. While the diagnostic benefits of PEMFs are accepted and widely used, medical practitioners are still realizing the therapeutic benefits of PEMFs.

In 1954, Japanese scientists first reported on the piezoelectric properties of bone. This finding led to further research showing that damaged bone responded therapeutically to electric fields and pulsed electromagnetic fields. Then in 1995, scientists at the University of Kentucky found that each type of soft tissue responds favorably to specific electromagnetic frequencies.¹

Since then, peer reviewed clinical research documenting the biological and therapeutic effects of PEMFs has increased dramatically. Despite this research contributing to the development of many types of effective PEMF devices, the Food and Drug Administration (FDA) has cleared relatively few of these devices for treating specific conditions. However, as clinical evidence continues to mount, and as patients drive the demand for effective but safer medical therapies, this will likely change. Since the FDA cleared the first therapeutic PEMF device over 30 years ago, there have been no postmarketing safety alerts issued for any of these devices. This reflects the overall safety of short sessions of therapeutic PEMFs.

The benefits of PEMF therapy have been documented in multiple peer-reviewed clinical studies for a wide range of medical conditions. Randomized double-blind, placebo controlled clinical trials using PEMF therapy have shown beneficial effects for chronic low back pain, fibromyalgia, cervical osteoarthritis, osteoarthritis of the knee, lateral epicondylitis, recovery from arthroscopic knee surgery, recovery from interbody lumbar fusions, persistent rotator cuff tendinitis, depression, and multiple sclerosis.^{2,3,4,5,6,7,8,9,10,11}

PEMF therapy and current FDA status

In 1979, the FDA cleared PEMF therapy in the form of electrical bone growth stimulators for use in treating non-union fractures. Subsequently, the FDA cleared PEMF therapy for failed joint fusion following arthrodesis, failed spinal fusion, and congenital pseudoarthrosis. In 1987, the FDA formally "grandfathered" 510(k) marketing clearance to a high frequency PEMF device for adjunctive therapy in the palliative treatment of postoperative edema and pain in superficial soft tissue. A similar device was given FDA approval in 2008 to deliver what its company calls "targeted microcurrent therapy."

Most recently, in October of 2008, the FDA cleared a PEMF device using repetitive transcranial magnetic stimulation (rTMS) for the treatment of Major Depressive Disorder in

adult patients who failed to achieve satisfactory improvement from prior antidepressant medication. In a multicenter clinical trial, approximately half of the patients experienced significant improvement in depression symptoms, and approximately a third of the patients experienced complete symptom relief at the end of six weeks.¹²

The future of PEMF therapy

The future of PEMF therapy is exciting given the findings of early research in a wide variety of health conditions. For example, preliminary data in clinical studies shows rTMS has promise in treating schizophrenia, post-traumatic stress disorder, obsessive-compulsive disorder, Alzheimer's disease, and Parkinson's disease.^{13,14,15,16,17}

In relation to cardiovascular disease, studies show how PEMF therapy may reduce blood glucose levels, blood viscosity, total cholesterol, and triglycerides, while raising high-density lipoprotein (HDL).^{18,19} These studies will hopefully serve as an impetus for further investigation given that heart disease is the leading cause of death in the United States. Another study shows how PEMF therapy may accelerate the healing of damaged brain tissue following acute stroke.²⁰

In light of the emergence of drug resistant bacteria, clinical studies show how PEMF therapy could one day become part of the standard of care in inhibiting *Staphylococcus aureus* infections and augmenting antibiotic therapy.^{21,22} Complicating the issue of antibiotic resistance are biofilms, dynamic mucous-like cities in which bacteria live and thrive. Biofilms protect bacteria and assist in bacterial cell-to-cell communication and in the exchange of genetic information. The same bacterium living outside a biofilm is less susceptible to antibiotics when living in a biofilm. Studies indicate PEMF therapy may effectively address this dangerous bacterial diversity.^{23,24}

Studies also suggest that PEMF therapy may one day be used to treat cancer. Findings show PEMF therapy induces apoptosis of cancer cells, inhibits the growth of malignant tumors, modulates the immune system via cytokines as an anti-tumor effect, and may act synergistically with chemotherapy and photodynamic therapy to combat tumor growth.^{25,26,27,28}

Effects of the pulsed electromagnetic field PST® on human tendon stem cells: a controlled laboratory study.

[Randelli P](#)^{1,2}, [Menon A](#)³, [Ragone V](#)³, [Creo P](#)³, [Alfieri Montrasio U](#)⁴, [Perucca Orfei C](#)⁴, [Banfi G](#)^{4,5}, [Cabitza P](#)³, [Tettamanti G](#)³, [Anastasia L](#)^{6,7}.

Abstract

BACKGROUND:

Current clinical procedures for rotator cuff tears need to be improved, as a high rate of failure is still observed. Therefore, new approaches have been attempted to stimulate self-regeneration, including biophysical stimulation modalities, such as low-frequency pulsed electromagnetic fields, which are alternative and non-invasive methods that seem to produce satisfying therapeutic effects. While little is known about their mechanism of action, it has been speculated that they may act on resident stem cells. Thus, the purpose of this study was

to evaluate the effects of a pulsed electromagnetic field (PST®) on human tendon stem cells (hTSCs) in order to elucidate the possible mechanism of the observed therapeutic effects.

METHODS:

hTSCs from the rotator cuff were isolated from tendon biopsies and cultured in vitro. Then, cells were exposed to a 1-h PST® treatment and compared to control untreated cells in terms of cell morphology, proliferation, viability, migration, and stem cell marker expression.

RESULTS:

Exposure of hTSCs to PST® did not cause any significant changes in proliferation, viability, migration, and morphology. Instead, while stem cell marker expression significantly decreased in control cells during cell culturing, PST®-treated cells did not have a significant reduction of the same markers.

CONCLUSIONS:

While PST® did not have significant effects on hTSCs proliferation, the treatment had beneficial effects on stem cell marker expression, as treated cells maintained a higher expression of these markers during culturing. These results support the notion that PST® treatment may increase the patient stem cell regenerative potential.

Low frequency pulsed electromagnetic field - A viable alternative therapy for arthritis

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Kalaivani Ganesan^a, Akelayil Chandrapuram Gengadharan^b, Chidambaram Balachandran^c,
Bhakthavatsalam Murali Manohar^d & Rengarajulu Puvanakrishnan^{a*}

^aDepartment of Biotechnology, Central Leather Research Institute, Adyar, Chennai 600 020, India

^bAswene Hospital and Research Center, Alwarpet, Chennai 600 018, India

^cDepartment of Veterinary Pathology, Madras Veterinary College, Vepery, Chennai 600 007, India

^dCentre for Animal Health Studies, TamilNadu Veterinary and Animal Sciences University, Madhavaram, Chennai 600 051, India

Arthritis refers to more than 100 disorders of the musculoskeletal system. The existing pharmacological interventions for arthritis offer only symptomatic relief and they are not definitive and curative. Magnetic healing has been known from antiquity and it is evolved to the present times with the advent of electromagnetism. The original basis for the trial of this form of therapy is the interaction between the biological systems with the natural magnetic fields. Optimization of the physical window comprising the electromagnetic field generator and signal properties (frequency, intensity, duration, waveform) with the biological window, inclusive of the experimental model, age and stimulus has helped in achieving consistent beneficial results. Low frequency pulsed electromagnetic field (PEMF) can provide noninvasive, safe and easy to apply method to treat pain, inflammation and dysfunctions associated with rheumatoid arthritis (RA) and osteoarthritis (OA) and PEMF has a long term record of safety. This review focuses on the therapeutic application of PEMF in the treatment of these forms of arthritis. The analysis of various studies (animal models of arthritis, cell culture systems and clinical trials) reporting the use of

PEMF for arthritis cure has conclusively shown that PEMF not only alleviates the pain in the arthritis condition but it also affords chondroprotection, exerts antiinflammatory action and helps in bone remodeling and this could be developed as a viable alternative for arthritis therapy.