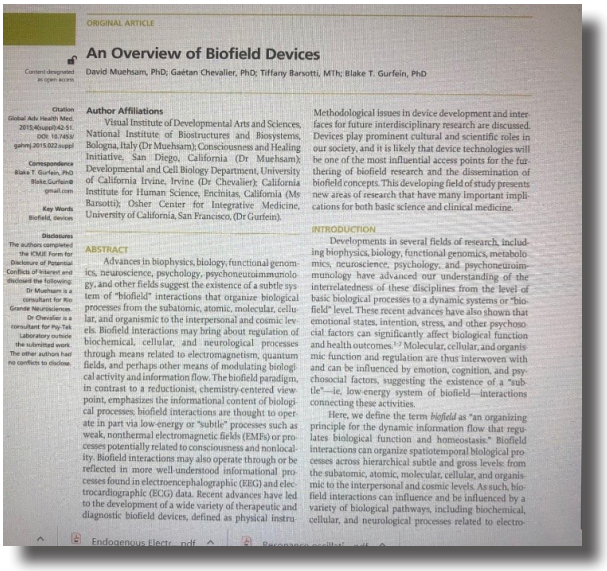
WHAT IS AMINO NEUROFREQUENCY (ANF)?

ANF is a Biofield Modality

This blog is all on Aminoneurofrequency which is a non-thermal EMF device. Part 1. ANF is a biofield therapy as been supported by Muehsam et al. (2015) Recent research has demonstrated "the existence of these extremely weak EMF effects suggests the possibility of bio information flow at extremely low energies and could foreshadow a paradigm shift away from the biochemical paradigm towards an information oriented model where weak EMF signaling plays an ESSENTIAL role in biological regulation". This means we can observe the influence of the nervous system through measuring its EMF.



ORIGINAL ARTICLE

An Overview of Biofield Devices

David Muehsam, PhD; Gaëtan Chevalier, PhD; Tiffany Barsotti, MTh; Blake T. Gurfein, PhD

Author Affiliations

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ABSTRACT

Advances in biophysics, biology, functional genomics, neuroscience, psychology, psychoneuroimmunology, and other fields suggest the existence of a subtle system of "biofield" interactions that organize biological processes from the subatomic, atomic, molecular, cellular, and organismic to the interpersonal and cosmic levels. Biofield interactions may bring about regulation of biochemical, cellular, and neurological processes through means related to electromagnetism, quantum fields, and perhaps other means of modulating biological activity and information flow. The biofield paradigm, in contrast to a reductionist, chemistry-centered viewpoint, emphasizes the informational content of biological processes; biofield interactions are thought to operate in part via low-energy or "subtle" processes such as weak, nonthermal electromagnetic fields (EMFs) or processes potentially related to consciousness and nonlocality. Biofield interactions may also operate through or be reflected in more well-understood informational processes found in electroencephalographic (EEG) and electrocardiographic (ECG) data. Recent advances have led to the development of a wide variety of therapeutic and diagnostic biofield devices, defined as physical instruMethodological issues in device development and interfaces for future interdisciplinary research are discussed. Devices play prominent cultural and scientific roles in our society, and it is likely that device technologies will be one of the most influential access points for the furthering of biofield research and the dissemination of biofield concepts. This developing field of study presents new areas of research that have many important implications for both basic science and clinical medicine.

INTRODUCTION

Developments in several fields of research, including biophysics, biology, functional genomics, metabolomics, neuroscience, psychology, and psychoneuroimmunology have advanced our understanding of the interrelatedness of these disciplines from the level of basic biological processes to a dynamic systems or "biofield" level. These recent advances have also shown that emotional states, intention, stress, and other psychosocial factors can significantly affect biological function and health outcomes.[1,2] Molecular, cellular, and organismic function and regulation are thus interwoven with and can be influenced by emotion, cognition, and psychosocial factors, suggesting the existence of a "subtle"—ie, low-energy system of biofield—interactions connecting these activities.

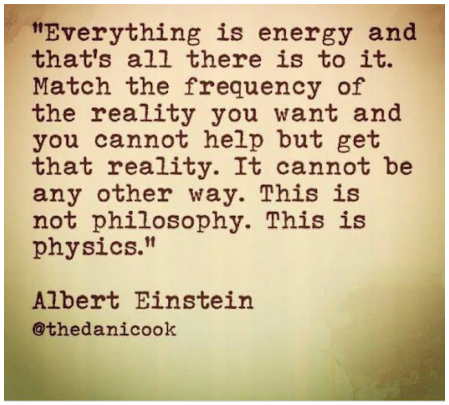
Here, we define the term *biofield* as "an organizing principle for the dynamic information flow that regulates biological function and homeostasis." Biofield interactions can organize spatiotemporal biological processes across hierarchical subtle and gross levels: from the subatomic, atomic, molecular, cellular, and organismic to the interpersonal and cosmic levels. As such, biofield interactions can influence and be influenced by a variety of biological pathways, including biochemical, cellular, and neurological processes related to electro-

Every living thing has a frequency

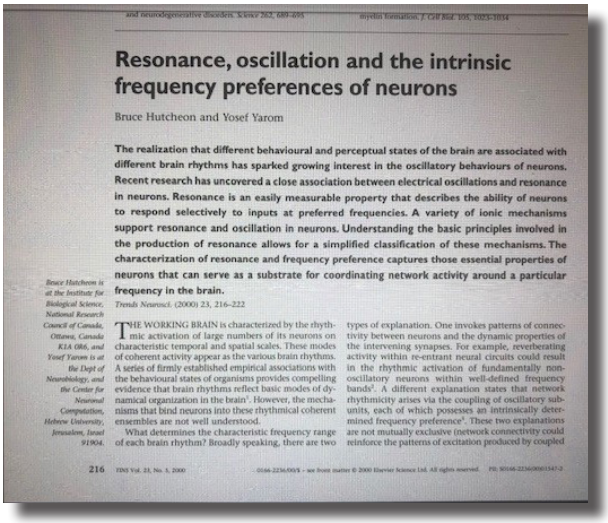
When I was first told "Every living thing has a frequency" I was like "....ok, ... what does that mean". Well here is my physio mind trying to simplify quantum mechanics, so here goes in a step by step presentation...

1. Living cells emit energy. It's what makes us 'alive'.

2. Energy is emitted as photons.



3. Each photon caries energy proportional to its radiation frequency that is specific to its type.



Resonance, oscillation and the intrinsic frequency preferences of neurons

Bruce Hutcheon and Yosef Yarom

The realization that different behavioural and perceptual states of the brain are associated with different brain rhythms has sparked growing interest in the oscillatory behaviours of neurons. Recent research has uncovered a close association between electrical oscillations and resonance in neurons. Resonance is an easily measurable property that describes the ability of neurons to respond selectively to inputs at preferred frequencies. A variety of ionic mechanisms support resonance and oscillation in neurons. Understanding the basic principles involved in the production of resonance allows for a simplified classification of these mechanisms. The characterization of resonance and frequency preference captures those essential properties of neurons that can serve as a substrate for coordinating network activity around a particular frequency in the brain.

Trends Neurosci. (2000) 23, 216–222

THE WORKING BRAIN is characterized by the rhythmic activation of large numbers of its neurons on characteristic temporal and spatial scales. These modes of coherent activity appear as the various brain rhythms. A series of firmly established empirical associations with the behavioural states of organisms provides compelling evidence that brain rhythms reflect basic modes of dynamical organization in the brain[1]. However, the mechanisms that bind neurons into these rhythmical coherent ensembles are not well understood.

What determines the characteristic frequency range of each brain rhythm? Broadly speaking, there are two types of explanation. One invokes patterns of connectivity between neurons and the dynamic properties of the intervening synapses. For example, reverberating activity within re-entrant neural circuits could result in the rhythmic activation of fundamentally non-oscillatory neurons within well-defined frequency bands[2]. A different explanation states that network rhythmicity arises via the coupling of oscillatory subunits, each of which possesses an intrinsically determined frequency preference[3]. These two explanations are not mutually exclusive (network connectivity could reinforce the patterns of excitation produced by coupled

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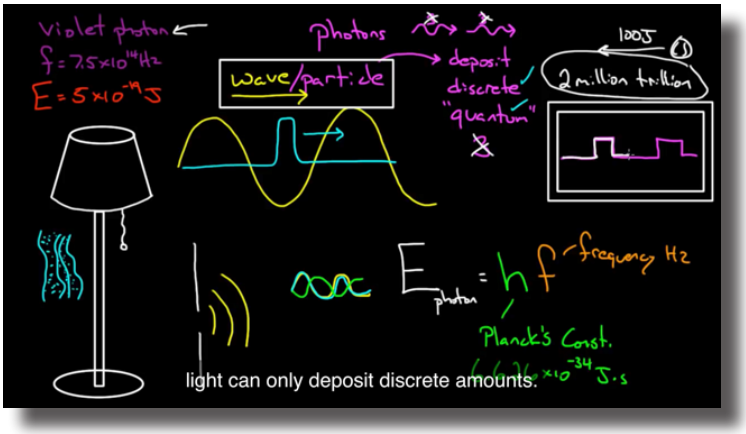


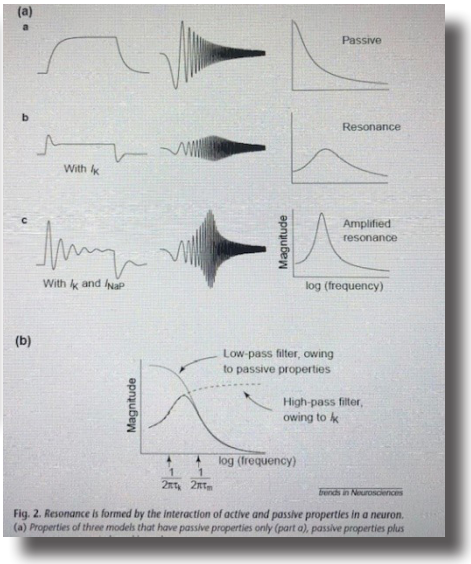


Fig. 2. Resonance is formed by the interaction of active and passive properties in a neuron. (a) Properties of three models that have passive properties only (part a), passive properties plus

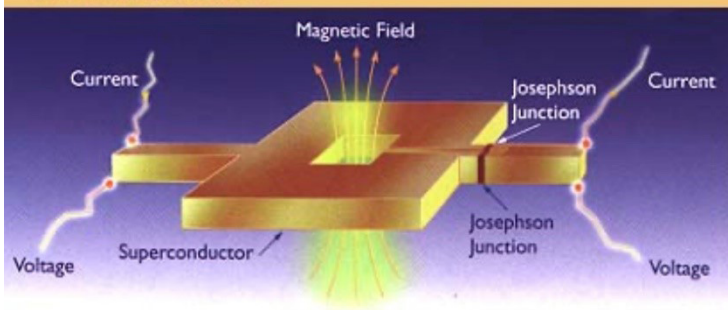
4. The frequency can be determined using a Superconducting Quantum interference Device (SQUID) by using the equation E=hf, where E is the Energy of the photon and h is Planck's constant.

5. A hydrogen proton has been found to have a resonant frequency of 42.6 MHz, a hydrogen molecule is different again due to its 2 shared electrons, water us different again as is fats etc (www.nap.edu/read/19017/chapter/24#253)

6. Bone has been determined to have 14-19 resonant frequencies (Harkanss, 1994).

7. The resonance frequency of neurons is determined by the active and passive interactions of the neuron. It can be determined by recording its firing patterns at both high and low frequency applications and observing its "notch filter" (or sweet spot) (Hutcheon and Yarom, 2000) See diagrams in pics. Once we know the resonant frequency of the target neuron it can be influenced by an exogenous EMF. But that will be described in Part 3. Why are we going into this in this depth? Because people quite rightly want to know if it's possible, so I've dedicated a bit of time to finding out if it is. Guess what? The science is there, it's just not molecular biology like what we're used to.

A SQUID (Superconducting QUantum Interference Device) is the most sensitive type of detector known to science. Consisting of a superconducting loop with two Josephson junctions, SQUIDs are used to measure magnetic fields.



A free hydrogen atom (H) would produce a resonant signal slightly

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different from the signal from a bare proton, due to the local field changes induced by its valence electron. Hydrogen gas (H_2) would produce a still different frequency since the local field around each proton is altered by the two shared electrons. Water molecules (H_2O) contain two hydrogen atoms and an entirely different "electron shield" than either H or H_2 and thus possess another, slightly different, resonance frequency. Fats and other lipid molecules, which are important cell-structure building blocks, have long chains of hydrocarbons, and the resulting ensemble of electron screening

Resonance frequencies of the human skull in vivo.

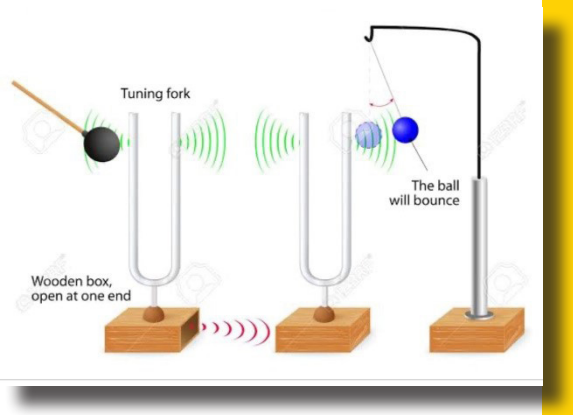
Håkansson B, et al. J Acoust Soc Am. 1994.
Show full citation

Abstract

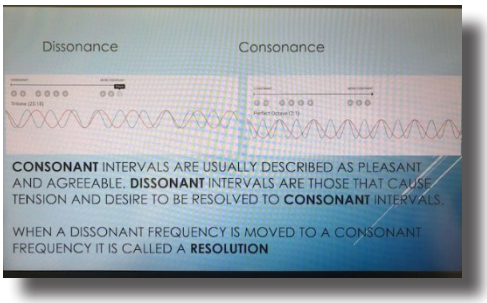
Patients with skin penetrating titanium implants in the temporal bone, for attachment of bone-anchored hearing aids, have made it possible to investigate the free-damped natural frequencies (resonance frequencies) of the human skull in vivo. The resonance frequencies of the skull of six subjects were investigated. Teh resonance frequencies were extracted from two frequency response functions (acceleration/force) measured on each subject: One point measurement where the force and acceleration were both measured at the same point, and one transcranial measurement where the acceleration was measured contralaterally. Between 14 and 19 resonance frequencies were identified for each subject in the frequency range 500 Hz to 7.5 kHz. The two lowest resonance frequencies were found to be on the average 972 (range 828-1164) and 1230 (range 981-1417) Hz. The relative damping coefficients of all resonances were found to be between 2.6 and 8.9%. Due to the relatively high damping coefficients, it is assumed that the resonance frequencies do not significantly affect bone conducted sound. In the transcranial

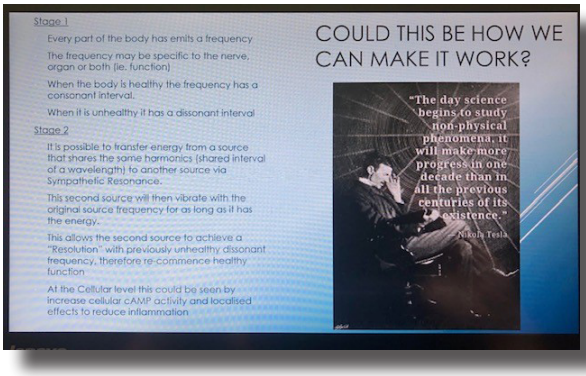
How does it work?

Part 3 in our “How does ANF work?” series describes one of the mechanisms at which the ANF disc can create its therapeutic effect.



The easiest way to describe this is via the law of Sympathetic Resonance. I am sure we have this this phenomenon before. Think about an experiment involving 2 tuning forks that have matched frequencies and/or harmonics. (Remember a frequency is the number of times the wave oscillates per second and the harmonic is a function of the wavelength) in the experiment you strike the first tuning fork and it vibrates at its predetermined frequency which is a function of its structure (think back to Part 2 how Hutcheon and Yarom (2000) states that a nerves frequency is determined by its structure and its function - yes, you see the parallels ☺) so the first fork (let’s call it “the disc fork”) vibrates and because it shares the same frequency/harmonic as the 2nd tuning fork (let’s call that the ‘nerve fork’) it can pass its energy into that structure and make it vibrate. This is Sympathetic Resonance. So (I hear you ask) how does the nerve oscillation or uptake of the discs energy create a therapeutic effect? This was described in a paper by Frölich and McCormick (2010) that showed via application of a very small EMF you could:





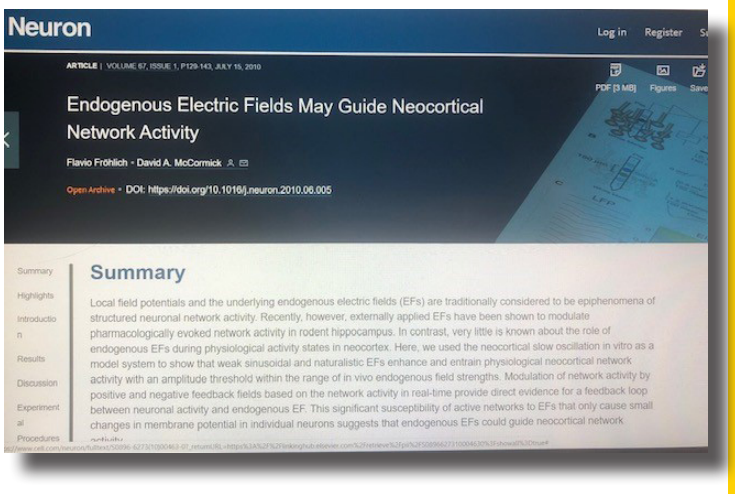
1. Change the membrane potential of a neuron to produce excitation (firing) of the nerve.

2. Increase the rate at which the nerve fired without changing the harmonic.

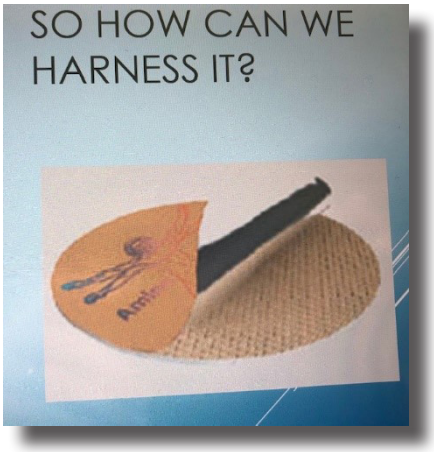
3. Create a wave of neuronal activity such as a neural signature that may act out as a function.

4. With a disruptive EMF you had the potential to be able to create a dissonant or disruptive frequency to reduce or inhibit a neurons effectiveness. Therefore if we know the frequency of the target neuron (see part 2) we can influence it by an applied EMF.

There is much research to be done to describe this further and acknowledgment must be given to Björn Nordenström (1983) who describes the inner mechanics of cellular and neural activity in the book ‘Biologically Closed Electric Circuits’, thar I have not described a part of this explanation in a desire to keep it concise and relatively easy to understand.



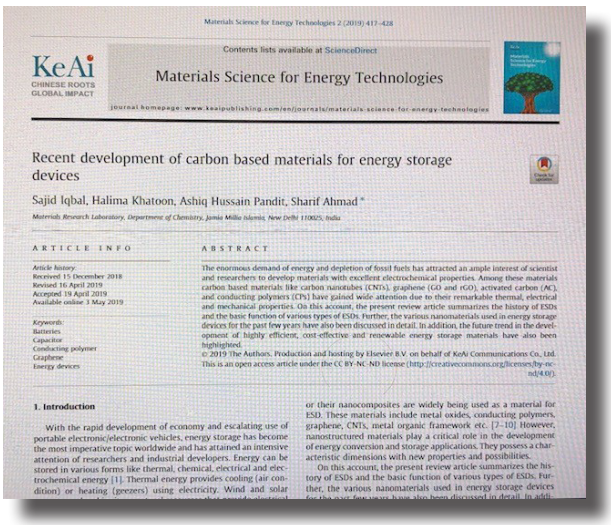
“Can a ‘sticker’ really hold a frequency?”



The ANF ‘DISC’ is composed of a 28.4% carbon metal alloy. The manufacturer states that the frequency is embedded into it using an ‘Accelerator Frequency Generator’ (AFG) using “coax cables attached to a large vacuum control box. This eliminates the interior atmosphere in the box down to 0.05 PSI during disc programming. This allows the AFG to send specific frequencies into the box without the normal atmosphere around then causing interference.”

The use of the super heat treated activated carbon metal alloys has been described by Iqbal et al. (2019) as having “excellent conductivity and high surface area … and an efficient energy storage material when used as a ‘super capacitor’.

Technology has come a long way very fast. With the use of nanoscale technology ANF presents a device that can store and emit a pre-programmed frequency once activated for a continuous 72hours. This separates it from other modalities that require an electrical source that create patient inconvenience as they are not ‘wearable’ like ANF.



Materials Science for Energy Technologies 2 (2019) 417–428

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Materials Science for Energy Technologies

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KeAi
CHINESE ROOTS GLOBAL IMPACT

Recent development of carbon based materials for energy storage devices

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ABSTRACT

The enormous demand of energy and depletion of fossil fuels has attracted an ample interest of scientist and researchers to develop materials with excellent electrochemical properties. Among these materials carbon based materials like carbon nanotubes (CNTs), graphene (GO and rGO), activated carbon (AC), and conducting polymers (CPs) have gained wide attention due to their remarkable thermal, electrical and mechanical properties. On this account, the present review article summarizes the history of ESDs and the basic function of various types of ESDs. Further, the various nanomaterials used in energy storage devices for the past few years have also been discussed in detail. In addition, the future trend in the development of highly efficient, cost-effective and renewable energy storage materials have also been highlighted.

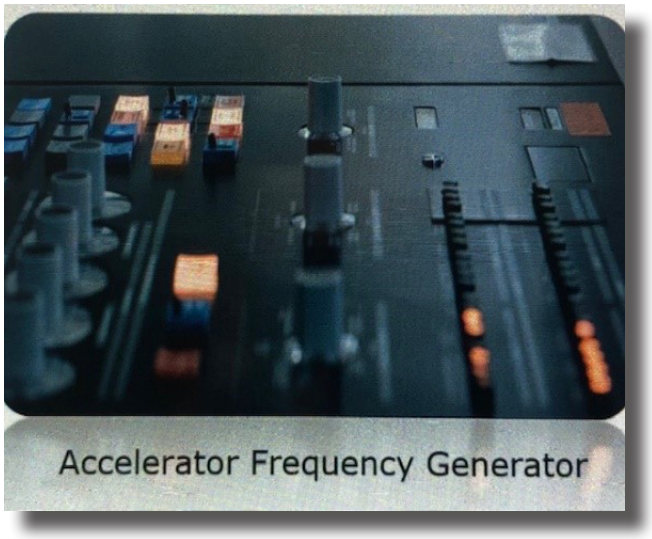
1. Introduction

With the rapid development of economy and escalating use of portable electronic/electronic vehicles, energy storage has become the most imperative topic worldwide and has attained an intensive attention of researchers and industrial developers. Energy can be stored in various forms like thermal, chemical, electrical and electrochemical energy [1]. Thermal energy provides cooling (air condition) or heating (geezers) using electricity. Wind and solar

or their nanocomposites are widely being used as a material for ESD. These materials include metal oxides, conducting polymers, graphene, CNTs, metal organic framework etc. [7–10]. However, nanostructured materials play a critical role in the development of energy conversion and storage applications. They possess a characteristic dimensions with new properties and possibilities.

On this account, the present review article summarizes the history of ESDs and the basic function of various types of ESDs. Further, the various nanomaterials used in energy storage devices

This may allow ANF to be used as a successful compliment to traditional treatment and exercise programs and return to loading for patients.



“Where’s the research?”

There is always a delay between what is observed in the clinic is “Clinical effectiveness” and what has been demonstrated in the research as being “Evidence based”. ANF is currently in that phase.

There is no doubt that good quality research needs to be produced to gain wider acceptance and I am aware of 3 such studies underway. In the interim we are left with extrapolating findings from non-thermal EMF investigations as well as using our own judgement of the literally thousands of anecdotal reports on its successes. Yes, when the research comes it has the capacity to revolutionize our medical thinking. Let’s hope it comes soon. I direct you to the @aminopainacademy page to watch this space.

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journal homepage: www.elsevier.com/locate/envpol

Thermal and non-thermal health effects of low intensity non-ionizing radiation: An international perspective☆

Dominique Belpomme [a, b, 1], Lennart Hardell [a, c, 1, 2], Igor Belyaev [a, d, e, 1], Ernesto Burgio [a, f], David O. Carpenter [a, g, h, *, 1]

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ABSTRACT

Exposure to low frequency and radiofrequency electromagnetic fields at low intensities poses a significant health hazard that has not been adequately addressed by national and international organizations such as the World Health Organization. There is strong evidence that excessive exposure to mobile phone-frequencies over long periods of time increases the risk of brain cancer both in humans and animals. The mechanism(s) responsible include induction of reactive oxygen species, gene expression alteration and DNA damage through both epigenetic and genetic processes. In vivo and in vitro studies demonstrate adverse effects on male and female reproduction, almost certainly due to generation of reactive oxygen species. There is increasing evidence the exposures can result in neurobehavioral decrements and that some individuals develop a syndrome of “electro-hypersensitivity” or “microwave illness”, which is one of several syndromes commonly categorized as “idiopathic environmental intolerance”. While the symptoms are non-specific, new biochemical indicators and imaging techniques allow diagnosis that excludes the symptoms as being only psychosomatic. Unfortunately standards set by most

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UDC 577:537.8

Review

PROSPECTS OF USING BIOLOGICAL TEST-SYSTEMS FOR EVALUATION OF EFFECTS OF ELECTROMAGNETIC FIELDS

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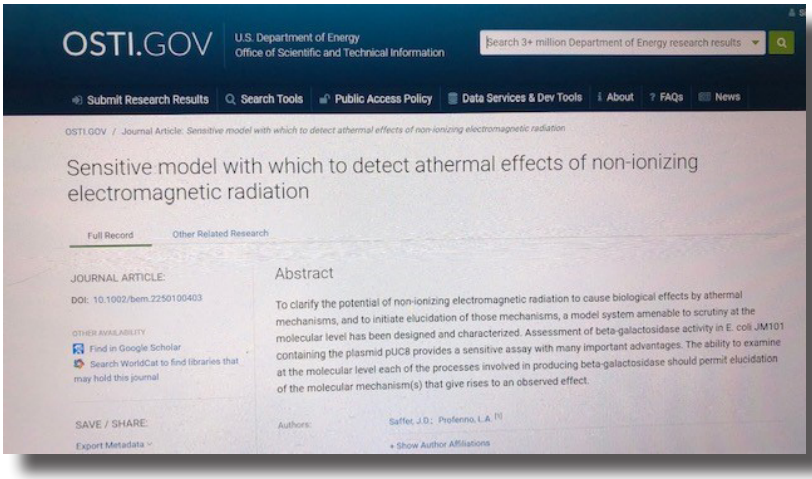
Electromagnetic fields (EMF) can occur both naturally and due to human activity. Nowadays, through the innovative communication technologies, the new sources of artificial EMFs are widely disseminated. Therefore, one needs to study the artificial EMFs and mechanisms of their influence on biosystems. The paper deals with the issues of the influence of artificial EMFs on human health, environment and biological objects. The experimental and theoretical investigations concerning an action of EMF are analyzed. The description of principles of standardization of non-specific EMFs and protection from the influence of man-made fields is presented. Possible mechanisms of EMF and electromagnetic radiation (EMR) action on biological objects, including those due to the accumulation of biogenic magnetic nanoparticles in an organism, are discussed. The aim of the research is to review state-of-the-art methods for detecting the biological effects of non-thermal non-ionizing EMF and EMR and to determine the prospects of using biological test-systems for evaluation of effects of EMFs. Hereby, the main attention is drawn to EMF sensors based on the cultures of microorganisms. The classification of existing test-systems is proposed according to criteria: 1) vitality of cells; 2) motor activity of cells; 3) bioluminescence and color changes under the influence of EMF. The need to develop simple and reliable biological indicators for various types of EMFs, especially for ultrahigh-frequency radiation in connection with the introduction of 5G communications technology, is substantiated. The necessity of standardized test-protocols for comparison of research results is emphasized. It is shown that the description of corresponding experiments should be accompanied by the following features: 1) name of the cell culture; native or modified cells; 2) physical characteristics of EMF or EMR (frequency, power, modulation, source type); 3) exposure duration of; 4) list of parameters to be investigated; 5) research methods; 6) absolute measurements, results and the relative magnitude of an effect; 7) what does the influence depend on (temperature, age of cell culture, composition of the nutrient medium); 8) inheritance of changes in cells; 9) relaxation time of the effect.

Keywords: man-made electromagnetic fields; electromagnetic radiation; biological effects; test-systems; classification of test-systems; 5G.

ANF is a non-thermal EMF device (NTEMF) that is non-ionizing, meaning it has the capacity to add energy to a cell seen by increasing its rate of oscillation without changing its molecular structure.
(as cited from ARPANSA Website)
NTEMF can produce local cellular changes by changes in reactive oxygen species (Belpomme et al. 2018) and Marynchenko et al (2019) outline the research methods used to detect biological changes from NTEMF for both positive and negative therapeutic effects. This demonstrates the emerging field of therapeutic study.



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OSTI.GOV / Journal Article: Sensitive model with which to detect athermal effects of non-ionizing electromagnetic radiation

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JOURNAL ARTICLE:

DOI: 10.1002/bem.2250100403

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Abstract

To clarify the potential of non-ionizing electromagnetic radiation to cause biological effects by athermal mechanisms, and to initiate elucidation of those mechanisms, a model system amenable to scrutiny at the molecular level has been designed and characterized. Assessment of beta-galactosidase activity in E. coli JM101 containing the plasmid pUC8 provides a sensitive assay with many important advantages. The ability to examine at the molecular level each of the processes involved in producing beta-galactosidase should permit elucidation of the molecular mechanism(s) that give rises to an observed effect.

Authors: Saffer, J.D.; Profenno, L.A. [1]

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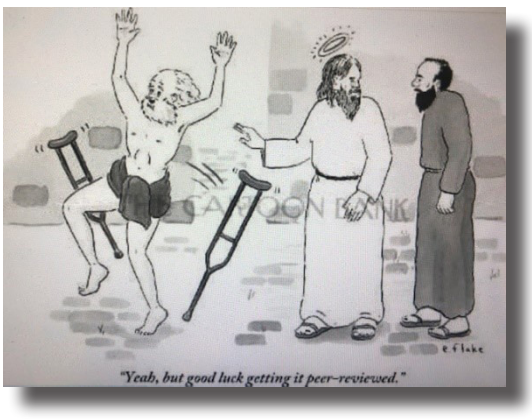
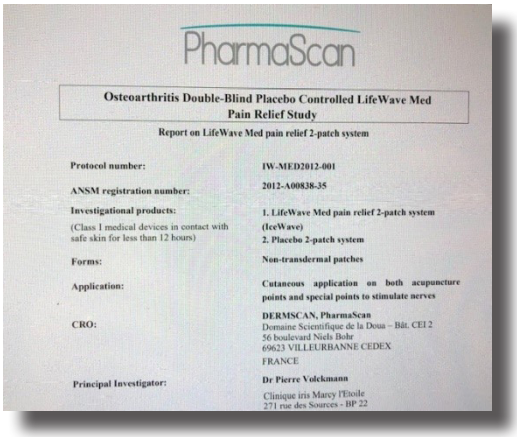
Volckmann (2012) demonstrated a 67% improvement in pain reduction compared to a 21% improvement with a placebo for knee OA for a similar device to ANF.



Greenberg (2010) was able to demonstrate a 22-46% increase in organ Carnosine and 29-57% increase in organ Glutathione levels (a key antioxidant for the body that combats reactive oxygen species) in a NTEMF device. Similar significant effects have been demonstrated on



PharmaScan

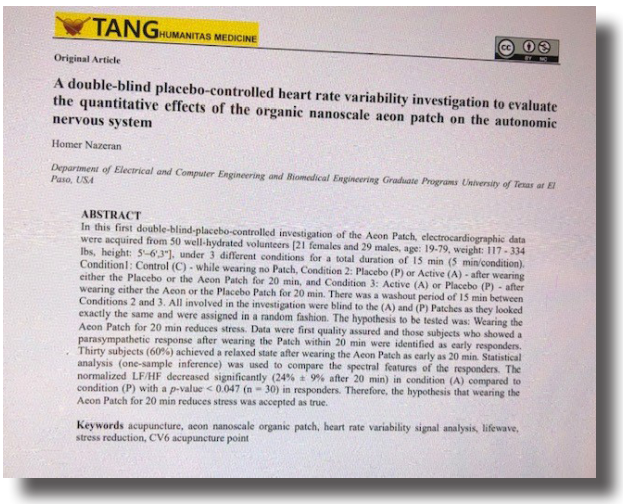
Osteoarthritis Double-Blind Placebo Controlled LifeWave Med Pain Relief Study

Report on LifeWave Med pain relief 2-patch system

Protocol number:	IW-MED2012-001
ANSM registration number:	2012-A00838-35
Investigational products: (Class I medical devices in contact with safe skin for less than 12 hours)	1. LifeWave Med pain relief 2-patch system (IceWave) 2. Placebo 2-patch system
Forms:	Non-transdermal patches
Application:	Cutaneous application on both acupuncture points and special points to stimulate nerves
CRO:	DERMSCAN, PharmaScan Domaine Scientifique de la Doua – Bât. CEI 2 56 boulevard Niels Bohr 69623 VILLEURBANNE CEDEX FRANCE
Principal Investigator:	Dr Pierre Volckmann Clinique iris Marcy l'Etoile 271 rue des Sources - BP 22

the autonomic nervous system via HRV measures (Nazeran, 2015).

There has been an exponential growth in studies involving NTEMF that demonstrate this as an emerging area in therapeutic medicine. As more case studies and publications are produced the mechanisms will become more widely understood. Until then feel free to ask any questions or contact me via PM if you would like to observe it in action.



TANG HUMANITAS MEDICINE

Original Article

A double-blind placebo-controlled heart rate variability investigation to evaluate the quantitative effects of the organic nanoscale aeon patch on the autonomic nervous system

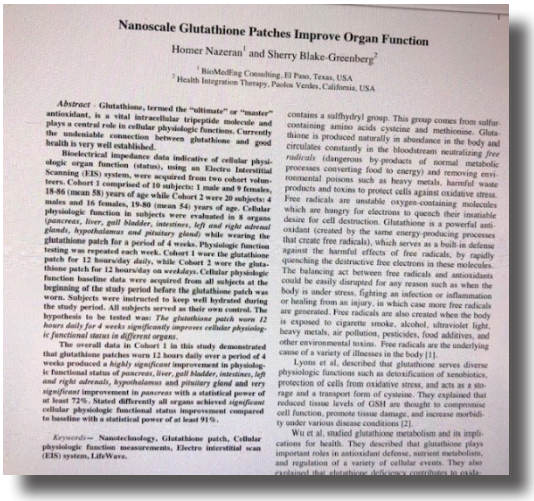
Homer Nazeran

Department of Electrical and Computer Engineering and Biomedical Engineering Graduate Programs University of Texas at El Paso, USA

ABSTRACT

In this first double-blind-placebo-controlled investigation of the Aeon Patch, electrocardiographic data were acquired from 50 well-hydrated volunteers [21 females and 29 males, age: 19-79, weight: 117 - 334 lbs, height: 5'-6',3"], under 3 different conditions for a total duration of 15 min (5 min/condition). Condition1: Control (C) - while wearing no Patch, Condition 2: Placebo (P) or Active (A) - after wearing either the Placebo or the Aeon Patch for 20 min, and Condition 3: Active (A) or Placebo (P) - after wearing either the Aeon or the Placebo Patch for 20 min. There was a washout period of 15 min between Conditions 2 and 3. All involved in the investigation were blind to the (A) and (P) Patches as they looked exactly the same and were assigned in a random fashion. The hypothesis to be tested was: Wearing the Aeon Patch for 20 min reduces stress. Data were first quality assured and those subjects who showed a parasympathetic response after wearing the Patch within 20 min were identified as early responders. Thirty subjects (60%) achieved a relaxed state after wearing the Aeon Patch as early as 20 min. Statistical analysis (one-sample inference) was used to compare the spectral features of the responders. The normalized LF/HF decreased significantly (24% ± 9% after 20 min) in condition (A) compared to condition (P) with a *p*-value < 0.047 (n = 30) in responders. Therefore, the hypothesis that wearing the Aeon Patch for 20 min reduces stress was accepted as true.

Keywords acupuncture, aeon nanoscale organic patch, heart rate variability signal analysis, lifewave, stress reduction, CV6 acupuncture point



Nanoscale Glutathione Patches Improve Organ Function

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Abstract - **Glutathione, termed the "ultimate" or "master" antioxidant, is a vital intracellular tripeptide molecule and plays a central role in cellular physiologic functions. Currently the undeniable connection between glutathione and good health is very well established.**

Bioelectrical impedance data indicative of cellular physiologic organ function (status), using an Electro Interstitial Scanning (EIS) system, were acquired from two cohort volunteers. Cohort 1 comprised of 10 subjects: 1 male and 9 females, 18-86 (mean 58) years of age while Cohort 2 were 20 subjects: 4 males and 16 females, 19-80 (mean 54) years of age. Cellular physiologic function in subjects were evaluated in 8 organs (*pancreas, liver, gall bladder, intestines, left and right adrenal glands, hypothalmus and pituitary gland*) while wearing the glutathione patch for a period of 4 weeks. Physiologic function testing was repeated each week. Cohort 1 wore the glutathione patch for 12 hours/day *daily*, while Cohort 2 were the glutathione patch for 12 hours/day on *weekdays*. Cellular physiologic function baseline data were acquired from all subjects at the beginning of the study period before the glutathione patch was worn. Subjects were instructed to keep well hydrated during the study period. All subjects served as their own control. The hypothesis to be tested was: *The glutathione patch worn 12 hours daily for 4 weeks significantly improves cellular physiologic functional status in different organs.*

The overall data in Cohort 1 in this study demonstrated that glutathione patches worn 12 hours daily over a period of 4 weeks produced a *highly significant* improvement in physiologic functional status of *pancreas, liver, gall bladder, intestines, left and right adrenals, hypothalamus* and *pituitary gland* and *very significant* improvement in *pancreas* with a statistical power of at least 72%. Stated differently all organs achieved *significant* cellular physiologic functional status improvement compared to baseline with a statistical power of at least 91%.

Keywords— **Nanotechnology, Glutathione patch, Cellular physiologic function measurements, Electro interstitial scan (EIS) system, LifeWave.**

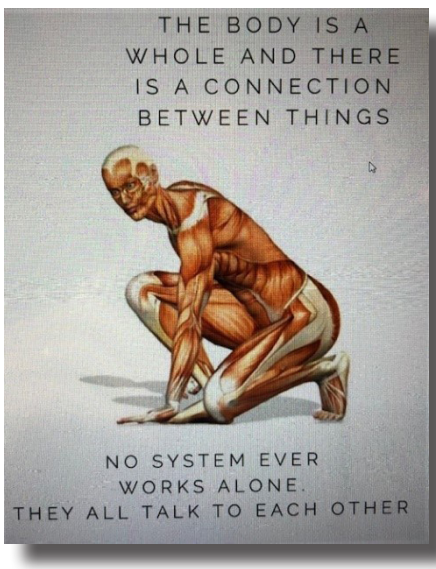
contains a sulfhydryl group. This group comes from sulfur-containing amino acids cysteine and methionine. Glutathione is produced naturally in abundance in the body and circulates constantly in the bloodstream neutralizing *free radicals* (dangerous by-products of normal metabolic processes converting food to energy) and removing environmental poisons such as heavy metals, harmful waste products and toxins to protect cells against oxidative stress. Free radicals are unstable oxygen-containing molecules which are hungry for electrons to quench their insatiable desire for cell destruction. Glutathione is a powerful antioxidant (created by the same energy-producing processes that create free radicals), which serves as a built-in defense against the harmful effects of free radicals, by rapidly quenching the destructive free electrons in these molecules. The balancing act between free radicals and antioxidants could be easily disrupted for any reason such as when the body is under stress, fighting an infection or inflammation or healing from an injury, in which case more free radicals are generated. Free radicals are also created when the body is exposed to cigarette smoke, alcohol, ultraviolet light, heavy metals, air pollution, pesticides, food additives, and other environmental toxins. Free radicals are the underlying cause of a variety of illnesses in the body [1].

Lyons et al, described that glutathione serves diverse physiologic functions such as detoxification of xenobiotics, protection of cells from oxidative stress, and acts as a storage and a transport form of cysteine. They explained that reduced tissue levels of GSH are thought to compromise cell function, promote tissue damage, and increase morbidity under various disease conditions [2].

Wu et al, studied glutathione metabolism and its implications for health. They described that glutathione plays important roles in antioxidant defense, nutrient metabolism, and regulation of a variety of cellular events. They also explained that glutathione deficiency contributes to cardi-

What if there were no discs?

I recently asked the attendees of my last course "do you think this course would be worth it if you were told that there were no discs? Let's say they had run out or a patient refused to wear them. Do you think what you have learned is beneficial even without the discs?" The answer was a resounding "Absolutely!"



What ANF teaches is an emphasis on a thorough assessment. We now ask questions deeper than what we previously considered. It teaches the interactions between all of the body systems. Emphasizing the need to reduce stress and it's effect on inflammation (Edwards 2008) but more importantly the emotions associated with both past and present injury. It stresses the importance of the #lymphatic system and how without addressing it healing cannot occur successfully (Pikor 2017). It emphasizes that reducing inflammation is not a passive process, it doesn't just

happen, it needs to be actively resolved (Serhan 2007). As therapists we have addressed this through movement, exercise, meditation and lifestyle change but tapping into the “why and how” only makes clinical decision making more efficient.

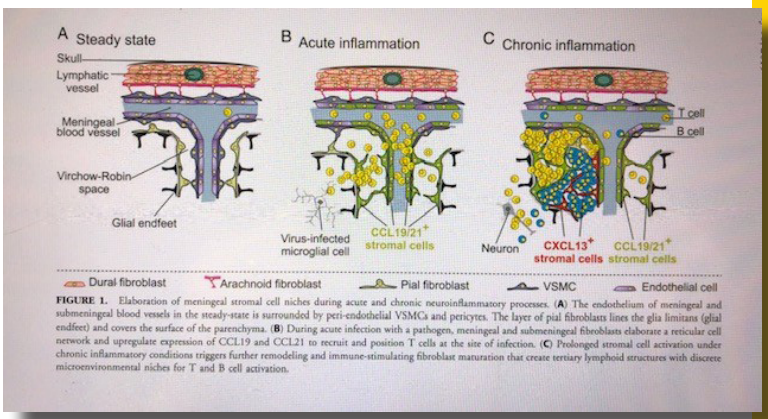


FIGURE 1. Elaboration of meningeal stromal cell niches during acute and chronic neuroinflammatory processes. (A) The endothelium of meningeal and submeningeal blood vessels in the steady-state is surrounded by peri-endothelial VSMCs and pericytes. The layer of pial fibroblasts lines the glia limitans (glial endfeet) and covers the surface of the parenchyma. (B) During acute infection with a pathogen, meningeal and submeningeal fibroblasts elaborate a reticular cell network and upregulate expression of CCL19 and CCL21 to recruit and position T cells at the site of infection. (C) Prolonged stromal cell activation under chronic inflammatory conditions triggers further remodeling and immune-stimulating fibroblast maturation that create tertiary lymphoid structures with discrete microenvironmental niches for T and B cell activation.

Franceschi et al. (2014) state that inflammation is the driving factor in many diseases, including atherosclerosis, cancer, autoimmunity and chronic infections, and a major contributor to age related conditions.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Resolution of inflammation: state of the art, definitions and terms

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ABSTRACT A recent focus meeting on *Controlling Acute Inflammation* was held in London, April 27–28, 2006, organized by D.W. Gilroy and S.D. Brain for the British Pharmacology Society. We concluded at the meeting that a consensus report was needed that addresses the rapid progress in this emerging field and details how the specific study of resolution of acute inflammation provides leads for novel anti-inflammatory therapeutics, as well as defines the terms and key components of interest in the resolution process within tissues as appreciated today. The inflammatory response protects the body against infection and injury but can itself become dysregulated with deleterious consequences to the host. It is now evident that endogenous biochemical pathways activated during defense reactions can counter-regulate inflammation and promote resolution. Hence, resolution is an active rather than a passive process, as once believed, which now promises novel approaches for the treatment of inflammation-associated diseases based on endogenous agonists of resolution.—Serhan, C. N., Brain, S. D., Buckley, C. D., Gilroy, D. W., Haslett, C., O'Neill, L. A. J., but undeniably critical one for acute inflammation to resolve. Dispensing with the inciting stimulus will halt further pro-inflammatory mediator synthesis (eicosanoids, chemokines, cytokines, cell adhesion molecules, *etc.*) and lead to their catabolism and the curtailment of pro-inflammatory signaling pathways (**Fig. 1**). Toll-like receptors are now held to play essential roles in the recognition of many of these invading organisms (*vide infra*). This, coupled with the release of factors that prevent ongoing PMN/eosinophil trafficking and edema formation, hails the beginning of the end—namely resolution of the acute inflammatory response and return to normal homeostasis.

One traditional view argued that pro-inflammatory mediator catabolism was sufficient for inflammation to switch off and the response subsequently just “fizzled out” (1). This is only part of the process at the tissue level, as PMN or eosinophils if left unchecked could do untold harm to an already inflamed site and must be disposed of in a controlled and effective manner. Thus, next in the sequence of events is cell clearance. The exit routes available to inflammatory leukocytes include


PAIN

Association of catastrophizing with interleukin-6 responses to acute pain

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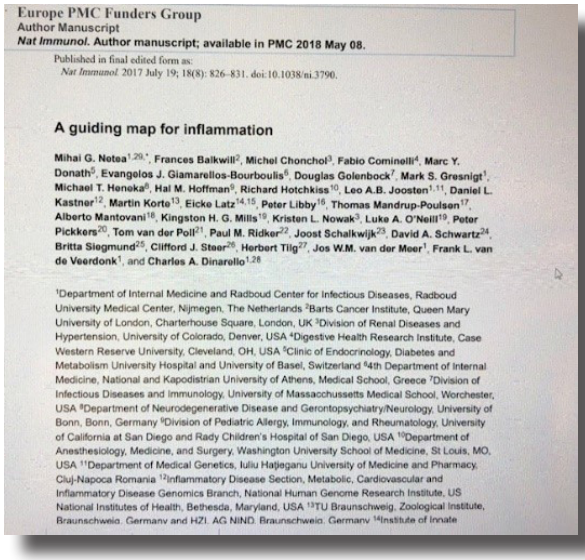
Abstract

The ANF approach is to reduce inflammation and improve the overall function of each body system. Understanding that each system is entwined and each system has a level of importance attributed to it that has evolved from our basic survival needs.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A guiding map for inflammation

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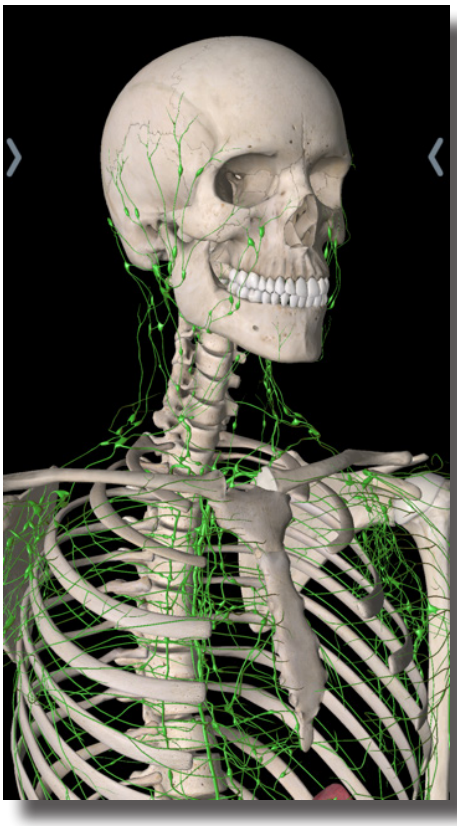
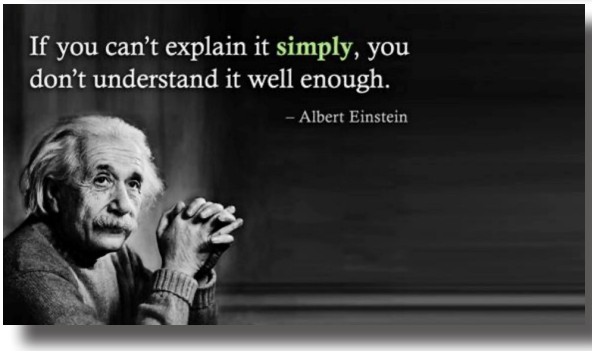
In this 6 part series we have described the growth in research into non thermal EMF modalities such as ANF and its benefits as a ‘wearable’ device to be discreet, convenient and apply a 72 hour dose. The mechanisms of how the body produces its frequency (Part 2), how the discs can exert an effect at cellular level (Part 3) and how the discs store their frequency (Part 4) have been detailed. Part 5 summarized the research into non thermal EMF modalities like ANF.





ANF holds great promise as BOTH a therapeutic approach and device for the future.