



Pulsed Electromagnetic Field Therapy (PEMF): New Perspectives in Therapy

By Christian Appelt, Medical Anthropologist, Germany

Introduction

During the last two decades scientific research has focused increasingly on the subject of the healing potentials of therapy methods that use pulsed electromagnetic fields (PEMF). The history of the study is not new. As early as the 19th century, scientists like Burr and DuBois-Reymond realized the healing potential of electricity and electrical applications on the human body.

In the early days of radio broadcasting, new concepts arose illustrating the effects of electromagnetic signals on the body in a medical and bio-physical paradigm. Let us take our perspective from there: We can imagine that a technical sending device broadcasts electromagnetic signals into the body, and it transmits qualities of energy and information. But – to stay in this picture for one moment – a series of questions arise immediately:

- Where is the antenna in the body – or are there millions of antennas? (Note: every radio receives its broadcasting signals through an antenna)
- Which is the optimum frequency one uses to effect the body in a healing manner? Or are there many different optimum values – and ways

to modulate those values?

- How do frequencies work inside a body? How does the body interact with frequency in a synergistic way?
- How can we explain that PEMF can induce effects in the biochemical world – why don't these effects happen *sui generis*?
- Is there any need for such electromagnetic approaches in the world of therapy?

Over the past century of scientific research that focused on questions like the above questions, one sees an expanding picture based on solid findings. Let us review some of these perspectives:

- Bringing the body into vibrational synchronicity is an effective form of fighting loss of bone density and Osteoporosis. Studies have been performed in both animal and human populations showing an improvement in bone mineral. (Hopson, 2006)
- Electromagnetic frequencies are known to support healing of wounds at a faster rate than without. It could be shown that treatments

with pulsed electromagnetic fields enhance the epithelialization and the contraction of open wounds. (Scott-Ritchey Research Center, California, published 1997)

- Research with Extremely Low Frequencies (ELF), have revealed an enormous healing potential and sped up the healing process via the rebuilding of collagen fibers in the extracellular matrix. (Ottani et al., Italy, 1987)
- Vodovnik & Karba came to the conclusion that nearly all experiments which worked with PEMF showed their success by speeding up the healing process of especially chronic wounds. Different frequency parameters lead to positive results as long as PEMF are applied. (Vodovnik & Karba, Ljubljana, 1991)
- Weather frequency phenomena correlate with intensity states of epileptic seizures. (Baumer, 1987)

We must admit that we are not able to understand these complex mechanisms completely. We can only see the tip of the iceberg at this point. In order to take a closer look at the understanding of the relationship between PEMF

Christian Appelt studied Medical Cultural Anthropology in Cologne, Germany. He focused on common patterns in healing concepts around the globe. This led him to the discovery of the supertuning frequencies. He is an active member of the German Society for Energy Medicine (DGEIM) and lives in Hagen. Contact Mr. Appelt at: christian-appelt@infomedic.de.

and a healthy living system, we must first start by looking into frequency phenomena in our environment.

Our Environment: A Pool of Different Frequency Patterns

Specific frequencies with healing potentials were known since the early middle ages in Europe (approx. 500 A.D.). A specific bundle of healing values are called Solfeggio Frequencies, and most recently one of these values – 528 Hz – has been reported as a repairing frequency for broken DNA strings. (Horowitz & Puleo, 1999)

Even in the history of Hinduism we find hints about healing tunes based on 136 Hz. In addition the main goal of chanting is to heal the mind/body of the chanter as well as the listener by lulling them both into a relaxed state (Appelt, 2000).

While we might experience a wonderful summer day with blue sky and temperate weather, hundreds and thousands of miles away, countless thunderbolts hammer down second by second on the surface of the earth. All these thunderbolts disperse great amounts of electric energy into the atmosphere of the earth, producing interferences and even producing standing waves called the Schumann waves. They produce a field of frequencies in a range of at least 1 to 40 Hz around the globe. The intensity and strength of these phenomena are influenced by the weather conditions and by more distant extraterrestrial factors such as solar and lunar positions, planetary positions and so on. Jim Oschman summarizes these facts in only a few words: "...the Schumann Resonance is created by terrestrial activities, and is modified or modulated by extraterrestrial activities. In radio terminology,

the signals are frequency modulated (FM)." (Oschman, April 1997)

Even if we take a deeper look we find a variety of other frequency phenomena on our planet. The so-called supertuning frequencies are the result of periodic movement phenomena of the earth, the moon and other planets. They can be calculated (Appelt, 2000). The "so-called" spherics or atmospheric are harmonic frequency phenomena to those supertuning frequencies that can be measured in relation to specific weather phenomena. Those frequencies seem to have a deep influence on organic structures, especially on proteins and even on psychomental states. (Baumer, 1987). A clinical study at the University of Freiburg, Germany, Department of Psychiatry, is planned to evaluate the affects of PEMF therapy (specifically, the ONDAMED System) on psychiatric patients suffering from weather-induced increases in their psychiatric disorders.

Oschman sums up the research results of Zimmerman who found out that even a healing touch was able to induce repair effects like "nerve regeneration," "bone growth," "ligament healing" and others more by transmitting specific frequencies from one human being to another. Oschman asks a very important question: "Why is that repair work in the body not activated naturally?" His answer, "Once the whole network (meaning the living matrix) is functioning, natural biological communication can flow freely through the entire system, from the extracellular matrix, across the cell membrane, through the cytoskeleton, to the nucleus and on to the gene level, and in the opposite direction as well

(Oschman, 1993, Oschman &



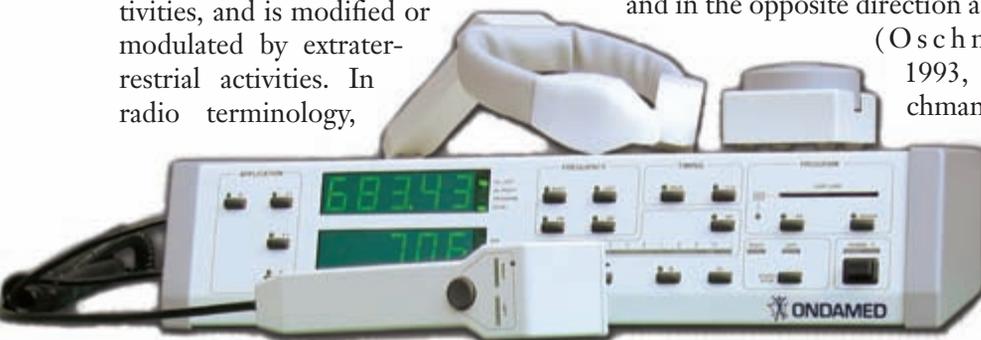
Oschman, 1994). "Suppose now accumulated physical and/or emotional trauma impairs continuity. The Application of "healing energy" ...would then open the network to the flow of energy and information." (Oschman, April 1997)

With PEMF strategies it is possible in the words of Jim Oschman to connect to something we can call the operating system of the body. Oschman gives us a picture to imagine what really happens when PEMFs are applied to the body:

Billions of cells are triggered; millions of chemical reactions are influenced in nano-seconds. The living matrix connects all parts of the body and sends the frequency signals immediately through the whole system. Every molecule in the body is able to communicate with its furthest. The body is a transparent network of energy.

One may assume that PEMF triggers this operating system, causing effects that can be observed with scientific instrumentation. From such research we learn which frequency values and which parameters cause special effects. Focusing on the question of the antenna, research shows that DNA, proteins, organs, tissues all interact with such frequency fields.

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Findings

Living systems on the earth are embedded in a pool of PEMF and during evolutionary processes a close connection between those fields and the healthy living systems might have been established. To be in tune with these fields is energetically more effective than to establish different tunes. To be in tune with these patterns might define a state of health. From this point of view it is understandable that technical PEMF which imitate the qualities of the environmental patterns have a positive influence on healing processes.

How can we find out which frequency parameters are needed for therapy? The Vascular Autonomic Signal (VAS) is a physiological response of the neuro-vascular system of the body to information being brought into its energy field. This response can be manually felt as a pulse amplitude change on the wall of the radial artery. The discovery of the VAS by Paul Nogier, MD in 1966 brought an energetic diagnostic tool which was recognized by ONDAMED inventor Rolf Binder in 1993. Nogier believed that the nature of the human body is highly sensitive and a powerful instrument that is responsive to subtle energy changes. The clinical experience with one of the most modern PEMF devices on the market, ONDAMED Biofeedback System, demonstrates clearly that the VAS can give us the answer to the question above.

Which frequency parameters are needed for therapy? With the help of the VAS it is possible to find out which frequency parameters or frequency patterns are needed for the body to achieve a homeostatic state. Finding a suitable wave form to conduct this energy into the body and defining the optimum form & time parameters is crucial. By looking at the form of electrocardiograms and on the form of spherics patterns, the conclusion was drawn that the form of such impulses as depicted in Figure 1 are optimal for therapeutic success.

Impulse rates emitted from specialized applicators induce two main effects simultaneously:

1. Bringing the body tissues into vibration and bringing movement into stagnating areas of the body = clearing the communication network of the living matrix.
2. Bringing health guiding frequency impulses back into the system.

Due to the combination of biofeedback and ONDAMED's frequency matrix, which is tone-structured, the

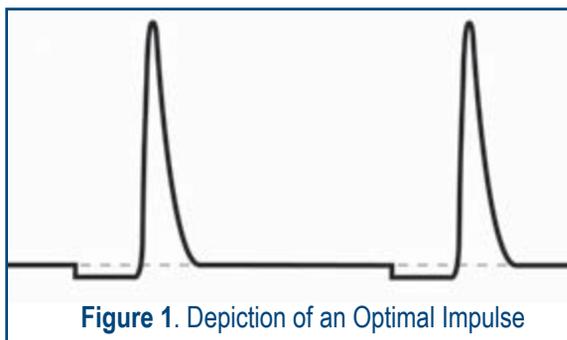


Figure 1. Depiction of an Optimal Impulse

therapist is able to choose the PEMF most specific to each patient. The ONDAMED Biofeedback System leads us to new horizons of PEMF based therapy.

Patient-Specific PEMF help kick-start a movement into stagnated cells/tissues/organs. At the very least the living matrix can flow and communicate freely within the body. The pulsed frequencies kick-start the body's own regeneration and repair mechanism.

Concluding Remarks

In the next couple of years, scientists will be able to explain to us more in depth the physiological effects of PEMF treatment. To many of us it is clear now, that PEMF has the potential to induce deep healing effects and in combination with Biofeedback methods like the VAS we are able to enhance the therapeutic effects of PEMF.

The ONDAMED System is a non-invasive and a non-significant risk therapeutic method. Recent clinical studies with this System have shown measurable effects with pain relief (90% on 27 subjects 2-12 treatments at the University Clinic of Maastricht, Netherlands).

With a PEMF device that is combined with Biofeedback, such as ONDAMED, it is possible to solve one of the most important problems in the therapy of chronic illness: The re-opening of the communication network in the living matrix. Flow and movement will be brought back into stagnating areas.

PEMF therapy combined with Biofeedback is beneficial for clinical application, as well as for Spa, Wellness, and Anti-Aging practices. The ONDAMED system kick-starts the nervous system, lymphatic system, the immune system, and metabolism as well as hormone functions.

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