

# The Use of Biofeedback Electromagnetic Energy in Therapeutic Treatments

by Terry Everitt

This edition of the journal has a number of articles and references that arose from the recent conference in Anti-Ageing and Aesthetic Medicine "PREVENTION — The Future of Health and Medicine" hosted by the AustralAsian Academy of Anti-Ageing Medicine (A5M). One of the workshops at the conference involved electromagnetic fields, which used in this context, causes a rapid response in a patient's atomistic structure.

It can be said that energy is the basis of life. The body is a mass of energy and most of this is electromagnetic. The nervous system is the first thought where this is totally evident. This system runs on electric impulses caused by chemical movement — atoms are in constant change and flow, thus providing electrical impulse.

Primarily, Western medicine for the last few millennia has been based in chemical energy models, while Eastern medicine to a large extent has been based in electromagnetic energy — Chakras and meridian points and the flow of energy in and around the body.

While Western medicine accepts the use of electromagnetic energy use at high levels, there is much scepticism about using the same energy at much lower levels.

One area of medical healthcare delivery, the anti-ageing specialty, is awake to this possibility and is not ignoring the importance of specific electromagnetic fields that help restore body functions.

While electromagnetic energy is nothing new, the workshop information did present a number of new options in the armamentarium available to the anti-ageing practitioner in patient treatment.

When you speak of electricity you automatically speak of magnetism since one cannot exist without the other. To oversimplify decades of physics research: *Ampère's Law* – Electricity gives rise to magnetism and conversely, *Faraday's Law of Induction* – Magnetism gives rise to electric currents.

It was postulated at the workshop, hosted by \*ONDAMED, that since the body is mostly electric (or energy-based), why, then, are we not treating tissue with stimulating energy fields?

The externally applied electromagnetic energy you are most familiar with is medical X-rays and more recently Magnetic Resonance Imaging has been used to rearrange the hydrogen atoms in order to view a specific picture from the inside of the body.

The electrical currents from the heart, brain, muscles, and by other tissues and organs give rise to electric fields that are measurable at the surface of the body. These fields are used in medical diagnosis and are well known and commonly accepted.

The most well-known example of how the different current strength is measured is via an electrocardiogram. On the other hand, an electroencephalogram measures the activity in the brain and an electromyogram measures electrical activity in the muscles.

Imagine if we could use the same type of energy, although in a much reduced manner and frequency, to scan the body, creating magnetic resonance to identify the areas requiring medical intervention, non-invasively with a field that is a million times lower than MRI technology.

## BIOFEEDBACK

This in fact is what is happening now, and in a way you may already know of it as a type of biofeedback.

Biofeedback acts as a kind of sixth sense, allowing patients to "see" or "hear" what is going on inside their body. Once the patient has been made aware of imbalances, the body automatically begins to correct them.

Without going into the technical details (although a good database search will bring up countless studies), biofeedback:

- Can be used to interact with a wide variety of physiological systems
- Has demonstrated safety and effectiveness for treating a wide variety of clinical conditions
- Encourages the patient and practitioner to work as a team to locate and become aware of areas of imbalance

"The fundamental discovery that most physiological processes previously thought to be regulated automatically (autonomic nervous

system) can now be regulated consciously if the processes can be brought to awareness via appropriate measurements. These appropriate measures are via electromagnetic fields".

**James L. Oschman, Ph.D**

By using electromagnetic fields, it is possible to access and restore at a cellular (and indeed sub-cellular level) a whole new vein in medicine that has opened up endless possibilities.

Faraday's Law of Induction enables magnetic fields to induce micro-currents into tissues, and these are conducted by ions and semi-conducted by electrons. This resonance enables fields of particular frequencies to influence specific structures within the body; however given that each patient is different, you do need the capability of determining the unique imbalances in each individual.

The Ondamed® system (which sponsored the presentation at the A5M conference, uses both sound and induced electricity as biofeedback signals, with the body's response monitored by radial artery pulse biofeedback.

Humans are electromagnetic beings, and are receptive to subtle current impulses of electromagnetic vibrations, that effect the body's fluids, organs, tissue and cells. The flow of electrons primarily takes place in connective tissue, which the body has an abundance of in many different types.

Did you know that collagen, a substance that we work so hard to restore and maintain, being one of the most prevalent proteins in the body, is a great semiconductor of electrical impulse? This living matrix system that extends throughout the body is a semiconducting electronic network.

The spectrum of clinical applications of such therapy is enormous and includes pain, acute and chronic inflammation, sports injuries, anxiety and stress-related disorders, and hormonal, neurologic and vascular conditions, all being amenable to biofeedback techniques.

## ENERGY MEDICINE

Energy medicine is the diagnostic and therapeutic use of energy whether produced by or detected by a medical device or by the human body. Energy medicine recognises that the human body utilises various forms of energy for communications involved in physiological regulations. Energy medicine involves energy of particular frequencies and intensities and wave shapes that stimulate the repair of one or more tissue types.

Chemical reaction in the body is primarily effected by electrical impulse — we know enzymatic activity is affected by voltages and currents in surrounding matrix that the enzyme is in. The speed of these reactions is so fast that pure physical chemistry cannot achieve it by itself.

Cells and intracellular elements are capable of vibrating in a dynamic manner with complex harmonics, the frequency of which can now be measured and analysed in a quantitative manner. Schlebusch, K.P., Maric-Oehler, W. and Popp, F.A., (2005) used infrared thermography imaging to show the electrical impulse from acupuncture needles and the tracing of the impulse through the meridians. In an early work, Betty F. Sisken and Janet Walker, (1995) found optimal electrical therapeutic healing energy levels for various tissues:

- Nerve regeneration – 2 Hz
- Bone growth – 7 Hz
- Ligament healing – 10 Hz
- Capillaries and skin – 15 Hz.

Since this publication, much study has been undertaken in healing frequencies (again a database search will provide more reading than you could ever get through). This research is behind a number of equipment modalities available to the practitioner and for the individual at home with small hand-held devices.

## CONCLUSION

There are many devices and modalities available in the area of electromagnetic stimulation, and as with all equipment, be aware that price alone is not the best guiding factor. Due diligence is critical and must have TGA ARTG Certificate for use in Australia. I trust this article has provided you with background information for your own use and to help answer questions your clients may come up with. To learn more about electromagnetic fields (not necessarily therapeutic) a great independent source is the World Health Organisation site: <http://www.who.int/peh-emf/about/WhatisEMF/en/>

## UPCOMING A4M CONFERENCE

If you happen to be in Las Vegas early December for the American Academy of Anti-Ageing Medicine (A4M) conference you could learn more about the therapeutic benefits of this diagnostic and treatment modality at the Integrative Biophysics Workshop Thursday, December 9, 2010. The inventor of the ONDAMED Technology Rolf Binder, will be joined by Stephen Sinatra, MD, FACC, FACN, CNS, CBT, Jan Hranicky, PhD. and Silvia Binder, N.D., Ph.D, who will give an in-depth workshop on the technology and therapeutic applications.

The A4M 18<sup>th</sup> Annual World Congress on Anti-Aging Medicine and Biomedical Technologies will be held at the Mandalay Bay Resort and Casino in Las Vegas, Nevada, USA. **APJ**

\* ONDAMED is a battery-powered biofeedback device that a medical practitioner uses to determine which frequencies of sound, as well as the accompanying weak pulsed electromagnetic fields, cause a response in a patient's autonomic nervous system.

Temporary stimulation by these frequencies, combined with the patient's cognitive and non-cognitive participation, promotes relaxation, muscle re-education, and rehabilitation that returns the body to its former state of wellness.

## REFERENCES

- Betty F. Sisken and Janet Walker, *Therapeutic Aspects of Electromagnetic Fields for Soft-Tissue Healing, Electromagnetic Fields Advances in Chemistry*, Chapter 15, 1995, pp 277-285.
- Oschman, James L. Ph.D. Nature's Own Research Association [www.energyresearch.us](http://www.energyresearch.us)
- Schlebusch, K.P., Maric-Oehler, W. and Popp, F.A. 2005. *Biophotonics in the infrared spectral range reveal acupuncture meridian structure of the body*. *Journal of Alternative and Complementary Medicine* 11(1):171-173.

**Terry Everitt is known as a Master Aesthetician in Advanced Clinical Aesthetics and lectures at medical and aesthetic conferences, both in Australia and internationally, while also being an educationalist in the development of quality assurance learning. He is also a consultant in legislative compliance requirements within the vocational education and training environment. Terry holds membership with the Australasian Academy of Anti-Aging Medicine (A5M), Australian Society of Cosmetic Chemists, Australian Institute of Training and Development and the Australian Institute of Management among others. He can be contacted on 0414 483 758.**