

## The Science Behind Reiki

By Bernadette Doran, BS, RMT

All Reiki practitioners can talk about the extraordinary results they see after treatments with clients. But not everyone can explain exactly how those results come about.

Being able to articulate and share some of the principles underlying Reiki therapy can help dispel misinformation, expand understanding, compare perspectives between energy medicine and Western medicine, and encourage openness to treatments.

***The effects of hands-on energy therapy are the result of physical processes, not the placebo effect.*** When a patient or his doctor believes a treatment will help, that belief can create a physical change for the better. This is a proven phenomenon called the placebo effect, and many people mistakenly think that's how Reiki works. But an extraordinary study on mice with cancer demonstrates that the placebo effect is not the cause of successful Reiki outcomes.

After witnessing multiple cases of cancer remission associated with a healer who did hands-on energy work, researcher Krinsley D. Bengston apprenticed with him to learn how to reproduce the healing effect. Bengston obtained 5 experimental mice with mammary adenocarcinoma, which had a predicted 100% fatality between 14 and 27 days following injection. A skeptic, Bengston treated these mice for an hour a day for 30 days. The tumors developed a "blackened area," then ulcerated, imploded and closed, and the mice lived their normal lifespan. The control group of mice with breast cancer, sent to another city, all died within the predicted time frame.

The results were so remarkable, three replications of the experiment were done in different cities, all with skeptical volunteers trained to do hands-on energy healing. In these three studies, 87.9% of the energy-treated mice lived, and 100% of the control group mice died. In addition, the mice in remission from two of the four experiments were re-injected with cancer, and it did not take, suggesting a continuing, stimulated immunological response. Histological studies confirmed the viability of cancer cells through all stages of remission.

"The tentative conclusions," wrote Bengston, "are that belief in laying-on of hands is not necessary to produce the effect; there is a stimulated immune response to treatment, which is reproducible and predictable; and the mice retain immunity to the same cancer after remission."

***Reiki has electrical and magnetic qualities that can be measured.*** "We now have a set of logical, testable and refutable hypotheses that can account for the effects of various energetic therapies," according to James L. Oschman, Ph.D., one of the leading authorities on the science of energy medicine, in his book *Energy Medicine in Therapeutics and Human Performance*. "We focus on electrical and magnetic energies because these are the easiest to measure and we know more about their effects."

One of the most basic laws of physics, Ampere's Law, explains the electrical and magnetic energies in and around the human body. Ampere's Law says that when electrical currents flow through conductors, whether they are wires or living tissue, a magnetic field is produced in the surrounding space. Since living tissue – including the

heart and other muscles, the brain, and other organs – conducts electricity, the laws of physics mean they create a magnetic field around the body, called the biomagnetic field.

The modern science of magnetobiology explores the effects of magnetic fields on living systems, and these fields can be measured with such instruments as the magnetometer and the superconducting quantum interference device (SQUID).

Tools have become increasingly sophisticated for measuring biogmagnetic fields, especially since the emergence of quantum physics. But Western medicine has long used energy-based technologies for patient diagnosis and treatment, including magnetic resonance imaging (MRI), cardiac pacemakers and defibrillators, lasers, magnetic and electrical biopsies, and more. The electrocardiogram and electroencephalogram have been in use since the 1920s, so working with the biomagnetic field for therapeutic reasons has been a medical practice for almost a century.

***Pulsing magnetic fields can jumpstart the healing of tissue, bone and other body parts.*** In the 1970s, biomagnetic research showed that certain magnetic fields could stimulate the growth process in bone fractures that resisted healing. Soon after, the FDA approved Pulsing Electromagnetic Field Therapy (PEMF) for bone healing, in which wire coils placed near the fracture induce electrical current flows in the bone. The necessary frequency range is 7 Hz.

***Pulsing magnetic fields from the hands of Reiki therapists are in the same frequency ranges that are optimal for stimulating tissue repair.*** Biologically optimal levels of electromagnetic frequencies for stimulating human tissue repair are all in what's called the extremely low frequency (ELF) range. They have been documented as 2 cycles per second (Hz) for nerve regeneration, 7 Hz for bone growth, 10 Hz for ligament repair, and 15 Hz for capillary formation.

Dr. John Zimmerman measured the magnetic field frequencies of Reiki practitioners and other energy therapists while they worked on clients, and found that they all emitted ELF frequencies from their hands. The range of that field was 0.3 to 30 Hz, the same range of frequencies associated with healthy tissue and organs. The frequency occurring most often in the hands of energy therapists was 7 Hz, the same frequency as the PEMF device approved by the FDA for stimulating bone growth.

“In essence,” says Dr. Oschman, “the electromagnetic fields produced by a practitioner’s hands can induce current flows in the tissues and cells of individuals who are in close proximity.” Further evidence of this is documented in *The Electricity of Touch* by the Institute of HeartMath.

***The brain waves of energy therapists synchronize with the earth’s magnetic field.*** Also in the extremely low frequency (ELF) range is the Schumann Resonance, the basic frequency of the earth’s electromagnetic spectrum estimated to be 7.83 Hz. Some scientists call it the “tuning fork” of the planet, claiming that it generates natural healing properties when living things are entrained to its rhythm.

Entrainment occurs when two objects are synchronized by a common vibration or frequency level. This kind of entrainment is common among energy healers in the process of working on clients. Researcher Robert C. Beck used EEG recordings to study brain wave activity in a variety of practitioners in the act of healing, and they all

registered brain wave activity in the alpha state, averaging about 7.8 to 8.0 Hz. He concluded that during active therapy, healers' brain waves became phase and frequency-synchronized with the earth's electromagnetic spectrum.

Practitioners describe Reiki as the channeling of "universal energy." Certainly Reiki therapists are conductors of the "universal *frequency*" found to be optimally healing to the human body.

***Compassion and loving intention amplify the magnetic field.*** The heart generates the largest electrical and magnetic field of the body, about 100 times stronger than that of the brain and able to project about 15 feet. Rollin McCraty, research director at the Institute of HeartMath, demonstrated a relationship between a person's emotional state and the frequency spectrum of the electrical signals of the heart.

McCraty measured the electrical fields of two people holding hands or using light touch on the other, as a hands-on therapist would do. The data show that when people touch, a transference of the electromagnetic energy specifically produced by the heart occurs, evidenced by one person's electrocardiogram peak at different sites on the other person's body surface.

According to McCraty, intentional feelings of compassion, love and appreciation produce a certain frequency spectrum of the electrocardiogram that shows up in the biomagnetic field and affects the cells of the body in a beneficial way. If this intentionality is maintained, the frequency is sufficiently powerful to induce changes in the structure of water as well as DNA. Therefore, concludes McCraty, the more the healer can focus on a state of sincere love or caring, the more coherent the energy and the greater effect on tissue repair.

***Visualizing a Reiki symbol creates measurable electrical and magnetic fields.*** This happens through a common physiological process called amplification, according to Dr. James Oschman: "An image of a symbol or any other object on the retina of the eye results in a pattern of electrical activity that travels through the optic nerve to the optic lobes of the brain. The pattern of light on the retina is translated into a pattern of impulses on the occipital cortex."

An amplification then takes place, because the cortical map of the brain is about 10,000 times the size of the retinal area. Nerves from the retina contact many other nerves, so that the electrical energy spreads over a broad area. The electrical and magnetic fields produced by this neural activity in the brain are not contained to the head but spread throughout the body via the nervous system, connective tissue, and the circulatory system. So physically looking at a symbol, or merely visualizing it, results in neural activity that creates measurable electrical and magnetic fields.

***A simple definition to explain Reiki.*** Given all these discoveries, Dr. James Oschman offers a simple science-based definition: "Healing energy, whether produced by a medical device or projected from the human body, is energy of a particular frequency or set of frequencies that stimulates the repair of one or more tissues."

Much more information is available about energy medicine, including the bibliographical sources below. But this overview is a solid start to help clients, the curious, and the skeptical understand just a bit of the science behind Reiki.

- *Energy Medicine: The Scientific Basis* by James L. Oschman
- *Energy Medicine in Therapeutics and Human Performance* by James L. Oschman
- *The Heart's Code* by Paul Pearsall
- *The Science Behind Reiki: What Happens in a Treatment*, Tamisha Sabrina, The UK Reiki Federation
- *Science of the Heart: Exploring the Role of the Heart in Human Performance*, HeartMath Research Center, the Institute of HeartMath
- *EEG Amplitude, Brain Mapping and Synchrony in and Between a Bioenergy Practitioner and Client During Healing*, Subtle Energies Journal, Vol. 1, No. 3, The International Society for the Study of Subtle Energies and Energy Medicine
- *Science and the Human Energy Field*, James L. Oschman interviewed by William Lee Rand, Vision Publications
- *The Effect of the "Laying On of Hands" in Transplanted Breast Cancer in Mice*, Krinsley D. Bengston, Journal of Science Exploration, 2000; 14:353-364

*Bernadette Doran, BS, RMT, is the director of Equilibrium Energy + Education, a wellness center in Chicago dedicated to state-of-the-art energy-based therapies, classes and workshops. The website is [www.equilibrium-e3.com](http://www.equilibrium-e3.com), and Bernadette can be reached at [bdoran@industrialstrengthsoul.com](mailto:bdoran@industrialstrengthsoul.com).*

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