

The Scientific Basis for Energy Healing: Crazy or Quantum?

Susan Wagner

The energy of living beings is described by many terms — Chi, prana, ki, subtle energies and biofield to name a few. Traditional Chinese Medicine uses the term chi; East Indian traditions describe it as prana, and ki is of Japanese origin. Subtle energies and biofield are Western academic terms. These are all names for the same thing — the electromagnetic radiation that exists within, and emanates outward from, all living things. This magnificent force is what Energy Medicine practitioners utilize to promote the body's instinctive ability to heal.

Despite evidence for Energy Medicine practices being used for thousands of years, energy therapies continue to be controversial and even maligned. Perhaps this is because it is difficult for many people to understand something they cannot see. One of the most common and frustrating phrases I have heard is that “there is no research to support it.” But when I ask the usually highly educated person how often they have looked through medical literature for studies on energy therapies, the answer is predictable — never.

And yet, I understand where these folks are coming from. Energy Medicine does sound weird or woo-woo. When I first experienced energy healing for myself, I knew it worked. Yet, the inquisitive scientist

in me yearned to understand how it worked. That desire started a journey that I am still on. It led me to read about quantum mechanics in addition to the medical literature. As I learned more and more, it became clear that there was indeed no magic power at work. Energy Medicine is simply quantum physics blending with biology, with some spirituality thrown in for good measure! I hope by the end of this article you will understand that chi, prana, ki and biofields are not simply figments of the imagination.

Despite evidence for Energy Medicine practices being used for thousands of years, energy therapies continue to be controversial, and even maligned.

To best understand Energy Medicine we have to start with a brief lesson in physics. Please note that this is the Wagner version, and I apologize in advance to any physicists joining us. I have taken theoretical



The Scientific Basis for Energy Healing: Crazy or Quantum?

concepts that apply to energy healing and put them in a manner that makes sense to us lay people. Let's start with Newtonian physics. Remember Isaac Newton, the fellow allegedly hit in the head with the apple? That apple inspired him to look into and discover why objects fall in the first place. Isaac Newton's physics describes the motion of hard, indestructible substances in space caused by their mutual attraction. Gravity, motion and acceleration are all examples of these constructs. Newtonian physics explains life on a grand scale — the Earth and her relationship to the solar system. It allows us to send space probes to distant planets and land humans on the moon. But it does not explain what is happening at the subatomic level. The way in which the invisible quantum world functions cannot be explained by Newtonian concepts.

Albert Einstein was one of the brilliant individuals who understood that Newton's theories did not explain all of nature, and he wrote about emerging concepts that did not align with the current understandings of the day. Einstein spent his life trying to discover a universal theory of physics — one that would connect the large and subatomic worlds. His work is instrumental to understanding the energetic basis for life, and it is still being built upon today. One of my favorite Einstein achievements is $E = mc^2$, which I believe to be a highly spiritual statement. $E = mc^2$ states that matter (m) is neither created nor destroyed, it merely changes form — into E (energy). As an Energy Medicine Practitioner this mathematical formula allows me to comprehend how I can connect to the essence of a pet or person who has died. It tells me that each beloved being that has passed on still exists — their matter has changed to a different form of energy. In the wise words of Chief Seattle of the Suquamish Tribe, "There is no death, only a change of worlds."

Einstein's theories were instrumental in the evolution of a new science called quantum physics. These concepts emerged from the work of other brilliant

scientists, including Michael Faraday and James Maxwell. Faraday and Maxwell discovered that electrical charges create a disturbance in the space around them, called an electromagnetic field. Another electrical charge can feel this force. It was the first understanding of electromagnetic (or energy) fields. And just as electrical wires and magnets create and feel this force, so do we.

Maxwell Planck continued the advancement of this discipline. He found that heat radiation is not emitted as a continuous wave but appears in energy "packets." Einstein named them quanta, which are now accepted as "particles" called photons. Now we know what photon torpedoes, so common in science fiction stories, are based upon. Another famous scientist, Nils Bohr, later discovered that ultraviolet light could kick off electrons (particles) from a metal surface, much like bumper cars send us spinning and turning at the summer county fair. But in Newtonian terms, only another particle could displace those electrons. Bumper cars cannot be affected by someone's laser pointer, or could they? Simply stated, these researchers found that photons of electromagnetic energy do exist and behave as particles. The laser pointer could act like a bumper car. This concept is called the duality of matter and light.

One lesser known researcher, however, conducted the experiment that really anchored the duality of matter and light for me. His name is Brian Josephson, and he received a Nobel Prize in 1973 for his work. Josephson researched electromagnetic radiation with a device called a tunneler. He decided to try putting electrons (particles) through this machine, even though only waves should be able to go through the device. The electrons went through, which showed that not only could waves behave like particles, as Bohr showed us. Now particles were behaving as waves.

Why are these experiments important? Again, according to Newtonian physics, the duality of matter and light is impossible. Something is either



solid or wave — not both. These discoveries were tantamount to having a loving, playful Golden Retriever that is now meowing and running the household. Is she a dog or a cat? How can she be both? These revolutionary scientists showed us that we are both particle and wave at the same time! This fits perfectly with an energetic perspective on life — we have the particle, or physical, world and the unseen energetic, or wave, world. Both are a part of who we are, and both are accessible to us. Moreover, the particle aspect of our world is

manipulate it to enhance the body's instinctive ability to heal. They are very much like an orchestra leader tuning up musicians. A good maestro is trained to hear very subtle differences of intonation, so that he or she can assist the musicians in finding a near-perfect pitch. Energy therapists “tune up” their clients by working with their energy fields so the body comes back into harmony.

How does an Energy Medicine practitioner manipulate the energy field? It is through processes

Your magnetic field merges with everything around you. We are truly all the same; all species are part of the same “force field.”

actually made of vibrating electromagnetic energy. Every bit of our essence vibrates. And as we vibrate, we create a vibration around us. We literally send off invisible electromagnetic waves in all directions. We are like pebbles bobbing in a pond, creating ripples in all directions.

What's more, these ripples are as important to our reality as the water itself. They help establish the pond we exist in, and they can be used to create either a “tsunami” or a calm, peaceful life. The critically important concept I would like you to stop and think about is this: all energy is connected. We are part of an energy that flows through all of existence. Your magnetic field merges with everything around you. We are truly all the same; all species are part of the same “force field.” The human-human, human-animal and human-nature connections are not only emotional; they are physical.

Energy Medicine practitioners know that energy fields are connected. These practitioners detect the field surrounding a person or animal and

called resonance and entrainment, which are inherent in the properties of any wave. And remember, energy fields are made of waves of electromagnetic radiation. When one wave hits another object that is vibrating similarly, it synchronizes with it. In other words, it resonates with it. If you put two guitars on opposite sides of a room and plucked the E string on one, the sound would travel across the room and interact with the opposite guitar. Because the corresponding E string is of a similar frequency, it would resonate with the vibration and produce a sound.

The other property of waves that is extremely valuable is entrainment. When two waves of similar frequencies resonate, their frequencies entrain and they will eventually vibrate at the same rate. One wave increases or decreases the frequency of the other. Two pendulums of equal weight and length that are swinging at different rates will begin to swing together. The wave from one entrains the wave from the other and they synchronize. The more closely the waves resonate, the more in synch they become. We observe entrainment frequently in nature.¹ When a school of fish changes direction in a



moment it is because all the individual fish are acting as one unit. Their energy fields are entrained, so they move together. We also see this with the dormitory effect. Women living in close proximity will have their menstrual cycles together — their biorhythms actually entrain with each other.

While energetic connections in nature are fascinating, they still do not completely explain how Energy Medicine works within the body, and even if it does work at all. So, let's look at the scientific evidence supporting Energy Medicine as a legitimate healing modality. To do so, we will go back in time to when single-celled organisms were forming in the saltwater oceans of the earth.

When these organisms were developing, they had a life-threatening problem needing to be solved. The salt in sea water could enter the cell and bring water with it, as water loves to follow sodium. If left unchecked, the cell would swell and die. So the cells evolved proteins on their membranes to keep too much sodium from entering. These proteins accomplished this using a process that created an electrical charge. And where there is electricity, there is an electromagnetic field. Consequently, the very origins of life required an energy field! Fast forward to today. Cells in our bodies still use this sodium pump for many processes. We are one huge electromagnetic being.

I find animal studies to be especially helpful, since like cell cultures, animals do not have a placebo effect.

In fact, cell cultures are used frequently to research medications, and now they are being utilized in the

study of Energy Medicine. A research project using cancer cells showed an increase in the rate of death, as well as a reduction in growth, for the cells that were exposed to energy therapy.² This is an exciting area of research, as cell cultures do not have a placebo effect.

Measuring various cell types within the body can also be helpful in establishing a link between healing and Energy Medicine. In a study of women with cervical cancer, those receiving Healing Touch produced more Natural Killer cells than the control group.³ These cells are an extremely important mechanism in our immune systems battle against disease.

When an energy practitioner works with our energy fields for healing, how is the energy transmitted through our bodies, so that our cells can be affected? We know that water conducts electricity quite well, and our bodies are made of lots of water, so this may be an important mechanism. What could be far more significant is the research surrounding fascia — the connective tissue found throughout our bodies. Scientists have discovered that fascia is a piezoelectric material — meaning it conducts electricity. So, a practitioner can be working in one area of the body and the electromagnetic field may be conducted to other areas through fascia.^{4,5}

Finally, let's discuss clinical evidence on the efficacy of Energy Medicine. Clinical studies utilize laboratory animals, humans or domesticated animals to see whether Energy Medicine affects outcomes in a disease process. This type of research is imperative in the quest to prove that Energy Medicine really works.

Clinical research surrounding Energy Medicine has been used to study a wide variety of disorders, including anxiety, depression, pain, epilepsy and cancer. Several studies show a decrease in anxiety and amelioration of depression in humans.⁶⁻⁹ Pain research, however, is more difficult to interpret. Some studies show a clear response to Energy Medicine, techniques while others show no effect at all.¹⁰⁻¹³



This variation could be due to the skill level of the practitioner, the type of pain (acute vs chronic) and the ability of the patient to receive healing energy. The latter variable is beyond the scope of this article but is certainly worthy of consideration. Everyone has their own healing journeys and some progress differently than others.

I find animal studies to be especially helpful, since like cell cultures, animals do not have a placebo effect. A study with rats and wound healing found that after seven days of energy therapy, the rats that received energy therapy had more cells associated with skin healing on biopsy. Their wounds were also smaller. Both variables were statistically significant.^{14,15} In a study of dogs experiencing acute spinal cord trauma from disc extrusion, the group that received pulsed electromagnetic field therapy had less pain and slightly better neurologic outcomes.¹⁶ On a personal note, I have had animal patients with anxiety, aggression, mobility issues, cancer and pain respond very well to Healing Touch for Animals® therapy.

We are living in an exciting time. More and more rigorous research is being done on many different levels to help us understand Energy Medicine. These studies will most certainly lead to a greater acceptance of energy therapies in the mainstream world and open up a wondrous new age of healing exploration. €

References

1. Wever R. ELF effects on human circadian rhythms. 1974 Plenum Press, New York, 101-144 in ELF and VLF Electromagnetic Field Effects, M Persinger, ed.
2. Yount G et al. Evaluation of Biofield Treatment Close and Distance in a Model of Cancer Cell Death. *J Altern Complement Med* 2013 Feb;19(2):124-127
3. Lutgendorf SK et al. Preservation of immune function in cervical cancer patients during chemoradiation using a novel integrative approach. *Brain Behave Immune* 2010 Nov;24(8):1231-40
4. Rivard M et al. The structural origin of second harmonic generation in fascia. *Biomed Opt Express* 2010 Dec 1;2(1):26-36
5. Tozzi P. Selected fascial aspects of osteopathic practice. *J Bodywork Mov There* 2012 Oct;16(4):503-19
6. Tang R et al. Improving the well-being of nursing leaders through healing touch training. *J Altern Complement Med*. 2010 Aug;16(8):837-41
7. Billot M, Daycard M, Wood C, Tchalla A. Reiki therapy for pain, anxiety and quality of life. *BMJ Support Palliat Care*. Dec 2019, 9(4), 434-438.
8. Dyer N, Baldwin A, Rand WL. A large-scale effectiveness trial of Reiki for physical and psychological health. *J Altern Complement Med*. Dec 2019, 25(12), 1156-1162.
9. Post-White J et al. Therapeutic massage and healing touch improve symptoms in cancer. *Inter Cancer There* 2003 Dec;2(4):332-44
10. Dogan MD. The effect of Reiki on pain: a meta-analysis. *Complement Ther Clin Pract*. May 2018, 31, 384-387.
11. Assefi N, Bogart A, Goldberg J, et al. Reiki for the treatment of fibromyalgia: a randomized controlled trial. *J Altern Complement Med*. Nov 2008, 14(9), 1115-22.
12. Runnery A. Decreased Cortisol and Pain in Breast Cancer: Biofield Therapy Potential. *Evid Based Complement Alternat Med* 2015; 2015:870640
13. Sutherland EG et al. An HMO-based prospective pilot study of energy medicine for chronic headaches: whole-person outcomes point to the need for new instrumentation. *J Altern Complement Med*. 2009 Aug;15(8):819-26
14. Wang E, Zhao M. Regulation of tissue repair and regeneration by electric fields. *Chin J Traumatol* 2010;13(1):55-61
15. Thomas de Souza AL, Carvalho Rosa DP, Blanco BA, et al. Effects of Therapeutic Touch on healing of the skin in rats. *Explore (NY)*. 2017 Sep-Oct;13(5):333-338.
16. Zidan N, Fenn J, Griffith E, et al. The Effect of Electromagnetic Fields on Post-operative Pain and Locomotion Recovery in Dogs with Acute, Severe Thoracolumbar Intervertebral Disc Extrusion: A Randomized Placebo-Controlled, Prospective Clinical Trial. *Mary Ann Liebert, Inc*. Published online 1 Aug 2018/<https://doi.org/10.1089/neu.2017.5485>.