

# Quantum Functional Energy Medicine: The Next Frontier of Restorative Medicine

Michael J. Gonzalez, PhD<sup>a,\*</sup>

Elizabeth Sutherland, ND<sup>b</sup>

Jose Olalde<sup>a</sup>

DOI 10.14200/jrm.2019.0114

*If you want to find the secrets of the Universe, think in terms of energy, frequency and vibration.*

Nicola Tesla

## ABSTRACT

Living systems may be thought of as complex, nonlinear, dynamic, self-organizing energetic and field phenomena with negative entropy. At the highest level of organization, each life form may possess an innate biologic field, or biofield. This energy field maintains the integrity of the whole organism; regulates its physiologic and biochemical responses; and is integral to development, healing, and regeneration. Energy medicine refers to several systems that work with energy fields of the body to help restore health. Many energy-related therapies challenge the current biomedical paradigm because they cannot be explained by conventional biochemical or physiological mechanisms. Quantum physics is a better paradigm with which to understand these therapies.

**Keywords:** Functional medicine; Energy Medicine; Resonance; Vibration; Photobiomodulation

---

\*Corresponding author: Michael J. Gonzalez, Professor, Nutrition Program, Department of Human Development, School of Public Health, University of Puerto Rico, Medical Sciences Campus, GPO Box 365067, San Juan PR 00936-5067; E-mail: michael.gonzalez5@upr.edu

<sup>a</sup>Nutrition Program, Department of Human Development, School of Public Health, University of Puerto Rico, San Juan, Puerto Rico

<sup>b</sup>National University of Natural Medicine, Portland, OR, USA

Copyright © 2019 Michael J. Gonzalez.  This is an open-access article distributed under the terms of the Creative Commons Attribution NonCommercial-NoDerivatives 4.0 License. The use, distribution or reproduction in other forums is permitted, provided the original author(s) and the copyright owner(s) are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.

## INTRODUCTION

“Energy medicine” refers to several systems that work with energy fields of the body to help restore health. Many energy-related therapies challenge the current biomedical paradigm because they cannot be explained by conventional biochemical or physiological mechanisms. Quantum physics is a better paradigm with which to understand these therapies. Energy therapies typically involve low-level (subtle) energy field interactions. Examples of energy therapies include Healing Touch, homeopathy, acupuncture, magnet therapy, bioelectromagnetic therapy, electrodermal therapy, and phototherapy. Living organisms respond to extremely low-level nonionizing electromagnetic fields at a variety of levels ranging from cellular and subcellular to the brain, emotions, and behavior. The term “biofield” refers to the field of energy and information that surrounds and penetrates the human body. It is composed of both measurable electromagnetic energy and subtle energy (for example, Qi). One possible mechanism for the biofield phenomenon is that it acts directly on molecular structures, changing the conformation of molecules in functionally significant ways. Another potential influence of the biofield is that it may transfer bioinformation carried by energy signals interacting directly with known energy fields.<sup>1</sup>

Living systems may be thought of as complex, non-linear, dynamic, self-organizing energetic and field phenomena with negative entropy. At the highest level of organization, each life form may possess an innate biologic field, or biofield. This energy field maintains the integrity of the whole organism; regulates its physiologic and biochemical responses; and is integral to development, healing, and regeneration.<sup>2-4</sup> The concept of life force is ancient. Traditional healing systems such as Chinese medicine and Ayurvedic medicine consider that a form of life-giving energy flows throughout the body and that illness arises as a result of blockages, excesses, or irregularities in its flow. This energy is known by many names (for example, Prana, Qi, Ki, Mana, love, and spirit) and may refer to something similar to the present-day concept of the biofield, which is partly based on the electromagnetic field theory of modern physics. Additionally, some biofield systems, such as Reiki and Qigong, posit that an

individual’s life force is connected with a universal life energy. In quantum physics, both a particle view and a wave view are necessary to fully describe the nature of light and matter at the smallest scales. This dual model is called the “principle of complementarity.” As an explanatory model, it allows for a wide variety of energy effects.

## HUMAN ENERGY SYSTEM AND THE IMPORTANCE OF HIGH-FREQUENCY VIBRATIONS

The dynamic human energy system is a complex network of different types of energies. Gerber<sup>5</sup> described this network as follows: (1) biochemical energy (e.g. glucose, adenosine triphosphate, fats, protein); (2) bioelectrical energy (e.g. nerve signal transmission, cardiac electrical rhythms, neuroelectrical brain activity, piezoelectrical bone currents); (3) biophotonic energy (e.g. mitogenic radiation, ultraviolet biophotons emitted from DNA); (4) bioelectronic energy (e.g. inherent cellular/DNA activity; DNA vibrating at GHz frequencies); and (5) biomagnetic energy (e.g. by-products of cardiac, nerve, and brain activity; by-products of cellular activity; and subtle energies [Qi, Prana, and etheric energy]). These energies are part of a bioinformational model that flows within living systems. For example, the calcium ion is an information carrier. It triggers different cellular events in different cell types. When calcium flows into cardiac pacemaker cells, it influences heart rate. When it flows into vascular smooth muscle cells, it affects vasoconstriction. Other information carriers include genetic material (DNA and RNA), biochemical signals (e.g. peptides, steroid hormones, neurotransmitters, nutrients), electrical signals (nerve cell transmission), light or biophotonic signals, and subtle energy signals. This aspect of energy as information links to the concept of molecules as information and supports the orthomolecular understanding of health homeostasis.<sup>6</sup>

Energy supply is a necessary condition for life, and any disturbance in energy metabolism may increase

the likelihood of pathological outcomes. Cancer cells can obtain approximately the same amount of energy from fermentation as from respiration. This is known as the Warburg effect.<sup>7</sup> By contrast, normal cells obtain greater levels of energy from oxidation than from fermentation.<sup>8</sup> Warburg showed that impairment of oxidative metabolism in cancer is conditioned by mitochondrial dysfunction. Cancer research has focused predominantly on genetic mechanisms, considering, perhaps erroneously, that impaired oxidative metabolism is a side effect of malignant transformation rather than its fundamental cause.<sup>9,10</sup>

Continuous energy supply is a necessary condition for life. It excites a state far from thermodynamic equilibrium, in particular coherent electrical polar vibrations that depend on water ordering in the cell.<sup>11</sup> Energy transformation in mitochondria produces a special state to condense energy in electrical vibrations. The inner membrane potential helps form layers of ordered water molecules around mitochondria, which provides low damping of vibrations and therefore enables their high excitation. Disturbances in oxidative metabolism and coherence are a central issue in cancer development. The mitochondrial dysfunction reported by Warburg is caused by inhibition of pyruvate transfer into the mitochondrial matrix. The number of protons transferred from the matrix is reduced, which in turn decreases membrane potential and changes the ordering of water molecules around the mitochondria. Decreased membrane potential leads to increased damping and low condensed vibrational energy, resulting in decreased energy production.

## RESONANCE

The quantum principle of entrainment states that powerful rhythmic vibrations from one source will cause less powerful vibrations from another source to lock into the vibration of the first source. This is known as resonance. Resonance is a phenomenon in which a vibrating system or external force drives another system to oscillate with greater amplitude at specific frequencies. Resonant systems can be used to generate vibrations of a specific frequency. Using electroporation to restore transmembrane

potential and electron transport across cell membranes restores cellular metabolism and the immune system and correlates with health. This electromagnetic rejuvenation energy resonates at many different cellular frequencies and can tune each cell (by resonance) back to its original cellular frequency. Every organ and every cell in the body has its own resonant frequency. Together, they make up a composite frequency like the instruments of an orchestra. When one organ in the body is out of tune, it will affect the whole body. By restoring vibrational frequency, it may be possible to bring a diseased organ into harmony with the rest of the body. The resonant frequency of cells and organs happens to be the natural frequency of health for that individual cell. Nature always seeks the most efficient state; it takes less energy to pulse in cooperation than in opposition.

## LIFE ENERGY

Everything in the universe is made up of energy vibrating at different frequencies. At the quantum level, even things that appear solid are made up of vibrational energy fields. Every vibration produces a corresponding geometric form, and in this way crystals are built up. Crystals collectively form a body of an element according to its particular vibration. There may be a unique frequency or vibration of energy that fills the universe and is essential to all living cells. A unique vibration may produce a perfect state of resonance – its own pitch and tone. A tone is a steady periodic sound characterized by duration, pitch, intensity (or loudness), and timbre (or quality). A simple tone has only one frequency, although its intensity may vary. A complex tone consists of two or more simple tones, called “overtones.” Rhythm is a strong, regular, repeated pattern of movement or sound in time that can apply to a wide variety of cyclical natural phenomena. Beat is a pulse (regularly repeating event) in a basic unit of time. These relationships create what we call “harmony.” Harmony is the simultaneous occurrence of frequencies, pitches, or chords that lead to balance, homeostasis, and health. All life exists within a sea of vibration, and rhythm is fundamental to all of life. Therapeutic effects have been observed in several

meditative and healing practices that use resonance and rhythm in the form of chanting and prayers.

## HUMAN FREQUENCIES AND THE EARTH'S ELECTROMAGNETIC FIELD

In the human brain, alpha waves span the frequency range of 7.5–12.5 Hz. Alpha waves are present during deep relaxation, dreaming, and light meditation. It could be said that alpha waves are a gateway to deeper states of consciousness. They have been shown to promote mental coordination, calmness, alertness, inner awareness, mind–body integration, and learning. Schumann resonances (SR) are a set of spectrum peaks in the extremely low frequency portion of the Earth's electromagnetic field. They are global electromagnetic resonances. The energy of the Earth vibrates at a 528-Hz frequency. This frequency is thought by some to be so powerful that it can help repair DNA damage and restore harmony and equilibrium. Alpha waves closely resemble the fundamental SR frequency.

In experimental settings using DS4 electrodes connected to a BICOM machine (REGUMED GmbH, Gräfelting, Germany), it has been shown that humans emit biofrequencies. These biofrequencies fluctuate during the day in response to stressors, including emotional challenges and toxic substances within the environment. An individual's biofrequency may directly correlate with health status. The higher the vibration, the healthier the human body. Consistent exposure to negative stressors can lower energetic frequency. Energetic clearing methods such as prayer, meditation, and other practices can be used to significantly increase baseline frequency (up to 15 MHz). In other words, energetic resonance can be elevated to restore harmony within the body. Electromagnetic imbalance can negatively affect the specific vibrational frequencies of molecules, cells, tissues, and organs within the body. This energetic alteration often manifests as chemical imbalances that are associated with many diseases and illnesses.

## RESTORATION THERAPIES

There is an increasing appreciation in many alternative medicine systems of the electrical nature of biological functioning. One of the first scientists to explain this phenomenon was Georges Lakhovsky.<sup>12</sup> Lakhovsky proposed that exposure to a blend of higher frequencies stimulates the cell's life force, restoring vigor and balance. Regeneration is the replacement of irreparably damaged or lost cells by new ones. It may happen in a natural way by inherent restoration of resonance. It can also be achieved by lasers, hyperbaric oxygen, nutrients, stem cells, exosomes, and other regenerative biological therapies. It is possible that cancer can be treated with high-frequency therapies. Therapeutic strategies that restore mitochondrial function may trigger apoptosis in treated cells. In tumor tissues, reversing mitochondrial dysfunction with metabolism-modulating cofactors, oxygen, lasers, and information molecules may hold promise as an anticancer strategy.<sup>13</sup>

### BIOPHOTON THERAPY: LIGHT AS RESTORATIVE THERAPY

Biophoton therapy is the application of light to particular areas of the skin for healing purposes. The light (photons) is absorbed by the skin's photoreceptors, and the photons then travel through the body's nervous system to the brain, where they help to regulate bioenergy. By stimulating certain areas of the body with specific quantities of light, biophoton therapy can help reduce pain as well as aid in various healing processes throughout the body. The theory behind biophoton therapy is based on the work of Franz Morell.<sup>14</sup> It was expanded on by Popp and colleagues<sup>15</sup> who theorized that light can affect electromagnetic oscillation, or waves of the body, and regulate enzyme activity.

The body's communication system might be a complex network of resonance and frequency. All photons that are emitted by the body communicate with each other in a highly structured light field that surrounds the body and may also be the actual carrier of long-term memory. In addition, this light field regulates the activity of metabolic enzymes. The information transferred on biophotons is bidirectional. This means that as DNA sends

information out on a photon, information about all the biophotons from the body is broadcast back to cells, and, in particular, to tubulins, which are light-conductive molecules in the connective tissue. Illness may occur when biophoton emissions are out of sync. There is some evidence that light emission from patients with cancer is arrhythmic and scrambled, suggesting that cells are no longer communicating properly. It is known that cancer-causing chemicals alter the body's biophoton emissions and interrupt cellular communications. Therapies are emerging that involve stimulating the body with specific quantities of light to reduce pain and promote healing processes. It is possible that biophoton therapy holds promise for cancer treatment.

### **PHOTOBIO-MODULATION: ENERGY MEDICINE, THE FINAL FRONTIER**

The use of light as a medical intervention has entered into the field of energy medicine. The term for this modality is "photobiomodulation." "Photobiomodulation therapy" is the best technical term for low-level laser therapy. It is a light therapy using lasers or light-emitting diodes to improve tissue repair and reduce pain and inflammation wherever the beam is applied. It involves the delivery of light energy to modulate cellular mechanisms and often results in better health. Light is a most fundamental energy particle that is the source of life on Earth. Pigmented substances that accept photons in living tissue are called "chromophores." When a photon within a specific wavelength strikes a matching chromophore, the energy of the photon is transferred to the chromophore. This causes a biochemical change within the cell or tissue. If this change activates or improves cellular function, it is called "photobioactivation."

### **MITOCHONDRIAL PHOTOBIO-MODULATION**

It is generally accepted that the mitochondria are the initial site of light action in cells and that cytochrome c oxidase (the terminal enzyme of the mitochondrial respiratory chain) is the molecule responsible. Mixed-valence copper components of cytochrome c oxidase are believed to be the photo-acceptors. The excitation of the photo-acceptor molecule sets in motion cellular metabolism

through cascades of cellular signaling reactions or retrograde mitochondrial signaling. ATP is not only an energy currency inside cells but also a critical signaling molecule that allows cells and tissues throughout the body to communicate with one another.<sup>16</sup> ATP is believed to play a role as an important signaling molecule in many metabolic activities. Even small changes in ATP level can significantly alter cellular metabolism. Increasing the amount of ATP may improve cellular metabolism, especially in suppressed or malfunctioning cells. Degenerative conditions develop when the body's self-healing reserves lose their power.

It is thought that photons dissociate inhibitory nitric oxide from the enzyme cytochrome oxidase, leading to an increase in electron transport, mitochondrial membrane potential, and ATP production. Stem cells and progenitor cells appear to be particularly susceptible to photobiomodulation. A tumor-killing effect of ATP has been described.<sup>17</sup> ATP signaling acts, in part, to trigger apoptosis of tumor cells and to promote cell differentiation. At the cellular level, visible red and near-infrared light energy stimulates cells to generate more energy and undergo self-repair.

### **QUANTUM RESTORATIVE MEDICINE**

The vibrational responsiveness of living cells suggests a whole new medical panorama in which electrical waves, both natural and man-made, exert effects that can be either healing or harmful to the body's cellular oscillatory balance. Ancient scholars came to understand that everything is composed of the same energetic substance that vibrates at different frequencies. Traditional Chinese medicine, for example, is based primarily on the understanding of the transformation of universal Qi throughout the human body. According to traditional theory, energy or Qi flows along energy channels or meridians that run throughout the body. When the flow of Qi is disrupted or blocked, it can be released by stimulating specific points along each channel.<sup>18</sup> Qi itself does not flow down the nerve but instead surrounds the electrical flow with an intangible field that can be manipulated to some degree. This is reminiscent

of an electron flow in a magnetic field. Correcting the flow is considered necessary to ensure restoration or maintenance of health. Acupuncture deals with the body's own energy.

Today quantum physics proposes that all matter is composed of energy that is constantly vibrating at different frequencies. Underlying all of this motion is a ubiquitous force, an absolute energy medium, that has the ability to be everywhere at once. Quantum physics calls this force "vacuum energy" or "zero point energy." The wave-particle duality concept states that the movement of a particle through the absolute energy medium creates waves. A particle/ photon in a quantum field, therefore, resembles a molecule in a chemical. The ability to electrostimulate living tissue at the subcellular level and thereby energize the life force has huge medical implications. The right wavelength at the right time may have a specific therapeutic action. This is an orthomolecular principle with a quantum regenerative twist.

## CONCLUSION

The human body is a magnificent quantum physics phenomenon. It is an interplay of frequencies with molecules to provide the appropriate information to sustain the negative entropy state we call "homeostasis," or health. Certain frequencies may repel disease, and there may be a link between frequency (vibration) and health. Quantum physics describes the universe as fluctuating fields of energy and matter. When an organ of the body becomes unable to reproduce the necessary equilibrium to sustain health, the resulting deficiency in electronic energy produces imbalance, often throughout the system, which may develop into injury or disease. Energy medicine, vibrational medicine, regenerative medicine, and restorative medicine are complementary informational systems. Together, they can create a holistic new treatment paradigm to achieve the state of health.

## REFERENCES

- Rubik B, Pavek R. Manual healing methods. In: *Alternative Medicine: Expanding Medical Horizons: A Report to the National Institutes of Health on Alternative Medical Systems and Practices in the United States*. NIH Publication No. 94-066. Washington, DC: US Government Printing Office; 1994.
- Rubik B. Can Western science provide a foundation for acupuncture? *Altern Ther Health Med*. 1995;1(4):41-7.
- Rubik B. The unifying concept of information in acupuncture and other energy medicine modalities. *J Altern Complement Med*. 1997;3(suppl 1):S67.
- Rubik B. Scientific analysis of the aura. In: Heinze RI, ed. *Proceedings of the 19th International Conference on the Study of Shamanism and Alternative Modes of Healing*. San Raphael, CA: Santa Sabina Center, Dominican University; September 1-3, 2002.
- Gerber R. *Vibrational Medicine: New Choices for Healing Ourselves*. Sante Fe, NM: Bear & Co.; 1988.
- Gonzalez MJ, Olalde J, Rodriguez JR, et al. Metabolic correction and physiologic modulation as the unifying theory of the healthy state: the orthomolecular, systemic and functional approach to physiologic optimization. *J Ortomol Med*. 2018;33(1):1-12.
- Warburg O. On the origin of cancer cells. *Science*. 1956;123:309-14.
- Mikirova NA, Casciari JJ, Gonzalez MJ, et al. Bioenergetics of human cancer cells and normal cells during proliferation and differentiation. *Cancer Ther Oncol Int J*. 2017;3:555623.
- Seyfried TN, Shelton LM. Cancer as a metabolic disease. *Nutr Metab (Lond)*. 2010;7:7.
- Gonzalez MJ, Miranda Massari JR, Duconge J, et al. The bio-energetic theory of carcinogenesis. *Med Hypotheses*. 2012;79:433-9.
- Pollack GH. *The Fourth Phase of Water: Beyond Solid, Liquid, and Vapor*. Seattle, WA: Ebner and Sons; 2013.
- Lakhovsky G, Clement M. *The Secret of Life: Cosmic Rays and Radiations of Living Beings*. London: William Heinemann; 1939.
- Gonzalez MJ, Seyfried TG, Nicolson GL, et al. Mitochondrial correction: a new therapeutic paradigm for cancer and degenerative diseases. *J Ortomol Med*. 2018;33(4).
- Morell F, Scott AJ. *The MORA Concept: Patients' Own and Coloured Light Oscillations - Theory and Practice*. Stuttgart, Germany: Karl F Haug Verlag GmbH & Co.; 1990.
- Popp FA, Li KH, Gu Q, eds. *Recent Advances in Biophoton Research and Its Applications*. River Edge, NJ: World Scientific Publishing; 1992.
- Karu T. Mitochondrial mechanisms of photobiomodulation in context of new data about multiple roles of ATP. *Photomed Laser Surg*. 2010;28:159-60.

17. Mikhailov VA, Skobelkin OK, Denisov IN, *et al.* Investigations on the influence of low level diode laser irradiation of the growth of experimental tumors. *Laser Ther.* 1993;5:33–8.
18. Wang SM, Kain ZN, White PF. Acupuncture analgesia: II. Clinical considerations. *Anesth Analg.* 2008;106:611–21.