

# Scientific Support for Energy Medicine

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"Happiness is what we feel when our biochemicals of emotion, the neuropeptides and their receptors, are open and flowing freely. . . . It is a scientific fact that we can feel what others feel. The oneness of all life is based on this simple reality. Our molecules of emotion are all vibrating together." --research biologist Candace Pert, author of the bestselling book *Molecules of Emotion*.

Because we human beings are so interrelated from an energetic perspective, there is a refreshing optimism in energy-medicine approaches and in the practice of Healing Touch. In essence, the presence of a focused, intentional practitioner facilitates healing and movement toward well-being for someone who is in distress. The work offers a beacon of hope in relieving physical and/or emotional pain. It serves as a fine complement to conventional medical interventions and is an essential component for preventive and integrative healing practices.

Current science does not yet fully understand all the dynamics involved in achieving the effects noted in energy medicine, but relief from human suffering abounds in the clinical reports of HT practitioners. Even though the exact mechanisms are not yet fully known, use of this well-recognized practice is sought out and welcomed.

Take, for example, people who are very anxious about diagnostic tests or specific medical procedures. It's common knowledge that anxiety and worry by themselves can increase pain symptoms and block the flow of biochemicals essential for a procedure to be effective. Psychological concerns and expectations, either positive or negative, decidedly help to shape outcomes. The presence of a

caring HT practitioner can help promote much-needed relaxation as patients think of new ways to anticipate a procedure and focus on positive outcomes.

In this chapter, we'll consider the growing scientific evidence for seeing the human body as a series of vibrating electromagnetic fields that can be positively influenced without the invasion of foreign substances such as chemicals or drugs. We begin with the realities of current medical practices that point to the vibrational nature of the body for diagnosis and treatment. We'll continue with a brief discussion of modern physics with its views toward unlimited, open-ended possibilities as opposed to ideas of direct cause and effect. Emerging concepts in neurosciences such as neuroplasticity will be explored with an eye to the vast capabilities of the human mind to influence health and wholeness. And, perhaps most exciting of all, we'll look at the new biology that demonstrates the direct effect of thoughts, beliefs, and behaviors on cellular messaging and expression of genetic material.

Scientists describe their understanding of the world through theoretical models. The concept of human energies as a vibratory matrix of nonmaterial structures, such as those described in the previous chapter, gives a useful starting place. These vibratory structures seem to interact with identified physical structures such as cells, fluids, and organs to facilitate the flow of information throughout the body. We might think of this informational system as a flowing river that can be impeded where there are blocks to its flow pathways. Such impeded areas can cause disturbance, congestion, and subsequent illness in our bodies. The concept of energy-flow patterns is thus a useful model for understanding human illness and how we might alleviate further suffering. For example, determining how energy flows in a given part of the body is already a part of conventional medical diagnostics. As we shall learn, medicine is becoming more and more energetic in practice, even though the mechanisms for its effects are not yet fully explainable. Other more effective models, theories, and inferences will undoubtedly emerge as science evolves.

## **Vibrational Medicine**

Practitioners of Western medicine are becoming more interested in

understanding how energy moves in the body as medical science considers the electrical and magnetic qualities of the human organism. For diagnosis, a variety of non-invasive scanners can now give feedback about molecular exchanges within soft tissue. Sophisticated scans such as CT (computerized tomography), PET (positron emission tomography), and MRI (magnetic resonance imaging), show areas of constriction or obstruction that interfere with healthy flow patterns within cells and organ tissue.

The EKG (electrocardiogram) and the EEG (electroencephalogram) measure the electrical outputs of the heart and brain and then compare those outputs to normal electrical outputs in healthy persons. Newer tools, such as the EMC (electromagnetic cardiogram) and EMEG (electromagnetic encephalogram), additionally measure the magnetic outputs of heart and brain, which give even more accurate details of deviations from normal function in these vital organs. Technology using SQUID (superconducting quantum interference device) allows scientists to measure the human biofield and evaluate relative bodily strengths.

Medical treatments are also becoming less invasive as comprehension of the electromagnetic nature of the body increases. Orthopedic surgeon Robert O. Becker began to explore the electrical circuitry of the human body to treat complex bone fractures that did not heal with known methods in the late 1960s. He identified numerous direct currents of electricity that flowed throughout the body and found they reversed their flow pattern or direction at the site of an injury. When this "current of injury" was supported with a small amount of electrical stimulation, bone healing occurred.

Over the next several decades, Dr. Becker mapped out the energetic grids of the body and surmised that the energy system paralleled the nervous system in providing the communication of information to all parts of the organism. Unlike the nervous system, however, this system is nonmaterial and electromagnetic in nature. Thus, humans and higher life forms have dual information systems: 1) the nervous system with its many physical components such as nerve cells, dendrites, axons, and the spinal cord, and 2) the subtle energies that are electromagnetic in form, which I like to call the human vibrational matrix. These dual systems seem to augment each other to ensure optimal functioning. If a part of the body is diseased or surgically removed, other cells learn to take over missing

functions as much as possible through our energetic information networks.

Almost every day, new concepts for stimulating electromagnetic areas within the body are being developed to treat illness. Current energy-related treatments include high-frequency sound waves to break up kidney stones, electricity to relieve pain and shrink tumors, focused radiation to pinpoint and destroy specific cancers, electromagnetic fields to accelerate bone healing, laser surgeries to minimize tissue damage, and magnetic fields to alleviate inflammation associated with arthritis. Further explorations in modern medicine continue to study the presence of differing electromagnetic frequencies within the body to find new and more effective treatments.

The energy resources of the body can also bring about balance within body and mind to prevent illness or further disability. Working with HT is known to bring about relaxation, relief from anxiety, a sense of well-being, and enhanced wound healing and immune system function. (These effects are confirmed by ongoing and extensive research cited in the next chapter.) Because of these effects, many physicians are now encouraging their patients to explore energy therapies as part of treatment planning.

## **Quantum Interrelationships**

The presence of subtle energy was proposed in physics initially to describe the minute, ongoing relationships evident between subatomic particles even when separated over great distances. The presence of invisible, nonmaterial energies is now confirmed by particle astrophysicists who observe that at least 95 percent of the universe is made up of matter and energy that cannot be seen or measured. Called "dark energy" and "dark matter" for lack of better words, these subtle energies are also present in each one of us. Allied to our vital life force, such subtle energies are part of the qi (life-force energy) that can be noted in the many interactive functions within our bodies.

Einstein's famous equation for the interrelationship between energy and matter ( $E=mc^2$ ) also predicted the existence of energy beyond the known constant of the speed of light. Such extremely rapid

frequencies are not yet measurable but exist in the theories of leading physicists, especially those who consider multidimensional models of the universe.

Matter, energy, and human consciousness are profoundly interconnected. New concepts in quantum mechanics suggest the universe is made up of a succession of vibrating particles, or "strings." In a similar fashion, the human organism appears to consist of interactive vibrational patterns in the differing frequencies of the vast electromagnetic spectrum. Light that is visible to the human eye is but a very small frequency range within the huge array of known wave frequencies. They range from very slow patterns such as radio waves to very rapid ones such as gamma rays.

The remarkable world of interrelationships between subatomic particles that influence one another beyond space and time was proposed by physicist John S. Bell and later confirmed in particle experiments. Much of the presumed interrelationship between linear events, the traditional cause and effect brought forth by Newtonian physics, has been superseded in modern physics by an understanding of the vast array of possible outcomes for any given event or treatment. Nonlinear inconsistencies, such as the dual nature of light as both wave and particle depending on circumstances and observer effects, are now seen as part of a much larger picture that is not yet fully understood.

The possibility exists that a minute change in direction of a single subatomic particle, such as an electron, can influence a whole series of vibratory changes. This appears to be true within both the microcosm of molecules, atoms, and subatomic particles and the macrocosm of stars and galactic clouds. Global weather is an example of a large, well-known, but unpredictable and nonlinear system that responds to minimal perturbations. Minor temperature changes in one part of the ocean tend to produce massive changes in outcome patterns across the planet.

As we think of the human mind and body, we know that a single psychological insight or new "aha!" or idea can generate far-reaching emotional shifts and many new options. The body and our world function as large holograms in which change in one aspect or dimension can create wide-ranging effects throughout the entire system

The biofield as a whole and the energy centers have been studied extensively and their existence is steadily confirmed by science. Several experiments additionally show that a positive thought held by a strong adherent of meditation can cause a specific field of the body, such as one of the energy centers, to increase its vibratory rate.

Other studies with functional MRI demonstrate that tapping or stimulating specific acupoints can bring about activation of differing parts of the brain. Combining this stimulation with a self-affirming statement can shift a depressed person's limited brain patterns to a more effective utilization of all parts of the brain. Activating other parts of the brain via such stimuli can relieve depression and open pathways to more adaptive thinking. The likelihood that subtle energy components of the body can influence cellular structures and genetic material is also becoming more evident in the biological sciences, as we'll learn shortly.

A medical device known as pulsed electromagnetic field therapy (PEMF) is currently in use to "jump-start" and accelerate wound healing and severe bone fractures. This device emits an extremely low electrical and magnetic vibration ranging from 0.5 to 30 hertz. In a study of Therapeutic Touch practitioners and related hands-on healers, Dr. John Zimmerman was able to show that the emissions from the hands of the centered practitioners fell in the same frequency range of 0.5 to 30 hertz. In the case of the practitioners, the frequencies would vary according to the needs of the clients, while the PEMF machine cycles through these frequencies in a more random fashion. The human interchange between the fields of practitioners and clients thus facilitated more specific outcomes than the machine could.

Since the advent of quantum mechanics, science is moving to a much more fluid understanding of the delicate interrelationships in nature and in human societies. Earth's environments constitute whole interactive ecosystems, which, when permitted, always evolve toward increasing balance and stability. Systems theory based on the interactive networks within any given system also affirms these self-organizing, self-regulating potentials. Computer imagery and modeling further enhances and supports comprehension of global changes and can offer information about desirable, possible outcomes for worldwide systems.

At a recent social function, a lively retired physician asked me about my interests and career. When I mentioned my affection for energy medicine, he shook his head and stated firmly, "If something is not measurable, it does not exist." It appeared he was speaking from the model of physics that has been outdated for more than a century, yet was likely taught in his medical training.

I could not resist jumping into the fray and replied, "My understanding now is that if something is not measurable and it has known effects, it probably does exist in the form of subtle energy we can't yet measure." We went our separate ways in peace, but I wondered if he might also think love does not exist because we can't yet measure it directly. The most interesting aspects of human life seem to be full of intangibles.

In fact, we live in an open-ended, evolving world alive with possibilities and vastly more complex than realized heretofore. Let's find out what the neurosciences and the new biology of epigenetics can tell us about the great potentials within human consciousness.

## **Neuroplasticity and Neurogenesis**

Both neuroplasticity and neurogenesis represent concepts that were unheard of before the last decade. The neuroscientist studying the human nervous system believed until recently that the mind did not have the power to change itself and that mental belief patterns, once established, were set. The newly discovered flexibility of brain cells that enables them to take on different functions is called neuroplasticity.

The number of neurons, the nerve cells within the brain, were believed to be static after one's birth and to degenerate and diminish in number as one ages. The concept of neurogenesis describes the capacity for neural cells to regenerate and increase their numbers under certain conditions.

Neuroplasticity has become the new buzzword in neurology, because the human mind and its major organ, the brain, do indeed change constantly. For example, the flexibility of the human mind allows brain cells to interpret electronic signals understandable as human speech. This is evident when someone with total loss of hearing is treated with a cochlear implant in which the entire auditory nerve is removed and a small electronic chip is implanted in its place.

Sound is activated by a magnet outside the person's skull, and over time, his brain learns to interpret the electronic pulses as communication from another person. Many other examples abound as technological advances facilitate recovery from incapacitating conditions such as strokes and blindness.

Consciousness is defined as the total impressions, thoughts, and feelings of an individual. Everything in our lives is influenced by the nature of the patterns of consciousness we choose. Willingness to learn and respect our unique interests can profoundly influence and direct outcomes in our lives. However, lack of willingness and lack of flexibility limit our potentials.

Fixation on repeated thinking patterns and compulsive activity is the other, less desirable side of neuroplasticity. One can choose either direction with apparent ease. Thus, we experience people who are highly functioning in their advanced years and who engage in lifelong learning with enthusiasm, while other people seem "burned out" and uninterested by midlife.

Focused intention to help oneself and others is a most powerful force for change. In *Healing Touch*, students learn to direct consciousness in creative directions as a central theme. When practitioners speak of the dramatic changes in their lives after learning centering and self-care practices, they are in fact engaging the flexible capacities of their neurological wiring through willingness to learn and explore new dimensions of themselves.

Additionally, neurons have most recently been shown to multiply in the presence of novel and creative thinking. Repetitive patterns of thought and activity tend to inhibit or limit the generation of new nerve cells, or neurogenesis. Repeated activities and ruminating thoughts are especially prevalent in those who believe "it's all downhill after fifty" or those who believe aging is a time of misery and ill health.

A study of 2,700 older men over a ten-year period showed that those who engaged in regular volunteer activities had significantly lower death rates and better quality of life than those who did not. The study suggests that doing good is also good for the helper. Noted effects of altruism were reduced stress; improved immune function; and a sense of joy, peace, and well-being. The body is known to produce hundreds of feel-good chemicals called

endorphins, which relieve pain and mitigate stress responses. When endorphins are activated, our minds come alive and brain cells tend to reproduce.

Research into the nature of consciousness and its influences is ongoing. Although we appear to be individuals, we are also part of a larger whole known as humanity. Directed intention to help each other is a special form of consciousness. As we reach out to others with caring, we activate the various resources of our subtle energies and connect to a wider consciousness beyond that of the personal self.

## **The Genius in Your Genes**

One of the most fascinating interrelationships between consciousness, energy, and matter is found in the new science of epigenetics, first identified in 2001. This new field within biology focuses on the study of the many signals that activate or suppress gene expression within cells and in an entire organism. Until the advent of knowledge about gene expression, it was assumed that genetic material, stored in the double helix of the DNA molecule, was received at conception and did not vary throughout one's lifetime.

Gene expression, as it is currently known, varies with the electromagnetic energy flows shaped by each person's intention and consciousness. To put it simply, genetic material can turn "on" or "off" depending on circumstances and influences from outside the sheath that surrounds and protects the DNA strands. Hence, the prefix epi refers to effects from beyond the DNA genetic structures that can influence whether a given gene will be activated or not.

Get this: these outside influences can be our emotions, which produce identifiable chemicals such as the molecules of emotion that Candace Pert, PhD, described in the quotation at the beginning of this chapter. Other influences are our thoughts, beliefs, actions, attitudes toward life, and our choices. What our parents gave us in the form of genetic material is simply the stuff with which we start. We modify this material through our daily choices, intentions, and consciousness. Seemingly major life events such as trauma, war, and political influences also have some effect

on our genetic material, but our internal choices are the ultimate lens through which events external to the body are perceived. In effect, our consciousness is the filter through which the on/off switch of genetic material operates.

To give an example, consider what happens when you cut your finger. The traumatized tissue sends a quick signal via the body's two informational systems to the genes that are associated with wound healing, such as those that generate fibrins to create a blood clot to stem bleeding. These signals tell the proteins that are wrapped like protective sheaths around DNA strands to unwrap so that each gene associated with wound healing can be released. If there is a strong negative emotion such as anger present at the time the finger is cut, the signals to the protein sheath flow less rapidly or effectively. The messages may be garbled or altered because dealing with the emotion diverts available energy in that moment. Consequently, wound healing becomes delayed or compromised.

In his popular book *The Genie in Your Genes*, author-publisher Dawson Church, PhD, writes: "Epigenetic signals suggest a whole new avenue for catalyzing wellness in our bodies." To this extent, the psychological and biological factors involved in our daily stress reactions directly affect gene expression hundreds of times a day. If positive thoughts prevail, or if we have means to release blockages quickly, genes express their messages by unwrapping the proteins and genetic material needed at each given time for cellular healing. If negativity prevails in the form of a limiting belief or by hanging onto resentments, the expression will either be missing, incomplete, or delayed.

Among the many current studies of genomics, the nature of gene expression and its relationship to states of consciousness is one that actively demonstrates the effects of Dr. Herbert Benson's well-recognized "relaxation response." Systemic changes in the organism produced by relaxation and meditation methods have been documented for more than thirty years. These effects include release of muscle tension, increased oxygenation to tissues, and empowerment of the immune system. The exact mechanism for these broad changes at the cellular level was not understood until a recent study showed that a large number of genes express when a subject is centered and relaxed. The corresponding opening of the protein sheaths permits genetic material to initiate wide-ranging changes such as activation of the body's immune response teams,

effective coping with inflammation, regulation of cellular life spans, and absorption of free radicals. The new research provides the first compelling evidence regarding what actually happens inside our cells when we engage in focused breathing, meditation, centering, prayer, or positive self-statements.

The interaction between body and mind is indisputably clear with the emerging science of epigenetics. The work leads us to see ourselves as the key to gene expression via attitudes and beliefs. We have the power to select the interests, actions, and lifestyles that nurture gene expression. Each of us is indeed the genius behind the unique patterns that emerge from the billions of options possible within our biological make-up!

We have looked at the growing scientific evidence for practices of energy-oriented therapies. They include the reality of energetic diagnostic testing and treatment within the most current medical technology, the framework of interrelationships and subtle energies known to physics, the emerging science of human consciousness, and the actual confirmations within the science of epigenetics. It remains now for us to consider some of the most relevant research studies in relation to Healing Touch and associated energy-medicine modalities.

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