

Biofield Therapies: Energy Medicine and Primary Care

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KEYWORDS

- Integrative medicine • Biofield • Energy medicine
- Healing touch • Therapeutic touch • Reiki

Energy medicine modalities are perhaps the most mysterious and controversial of approaches used in complementary/alternative medicine (CAM). Although such practices have been an essential part of shamanic and other healing practices for as long as human communities have existed,¹ scientific investigation of energy medicine is in its early stages; much remains to be learned about mechanisms of action and efficacy.

An estimated 0.5% of Americans have used some form of energy medicine in the past year, according to the 2007 National Health Information Survey, which included 23,300 Americans.² A similar survey released by the Centers for Disease Control in 2004 indicated that 0.5% of participants had used qi gong and 1.0% had used reiki.³ These numbers may in actuality be much higher than survey data indicates, given that many CAM and other providers of therapies not formally classed as energy medicine-based (eg, massage therapists, chiropractors, and herbalists) also incorporate energy medicine into their practices. At least 50 hospitals and clinics in the United States offer energy healing to patients in some form.⁴

This article defines energy medicine and outlines key elements biofield therapies have in common. Several specific approaches are described, some of which are now incorporated into allopathic clinics and hospitals. Research findings related to efficacy are summarized. Proposed mechanisms of action and safety issues are also discussed. Guidelines are offered for primary care providers wishing to advise patients about energy medicine or to integrate it into their practices, and resources for obtaining additional information are provided.

DEFINITIONS

Daniel J. Benor, a physician who has written extensively on energy medicine, defines it as follows

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The term energy medicine derives from the perceptions and beliefs of therapists and patients that there are subtle, biologic energies that surround and permeate the body. It is suggested that these energies may be accessed in various ways through CAM for diagnostic and therapeutic interventions.⁵

The energy field of the body is often referred to as the biofield, and these modalities may also be referred to as biofield therapies.

The National Center for Complementary and Alternative Medicine (NCCAM) categorizes energy medicine modalities using two main classes.⁶ Modalities in the first class, veritable energy modalities, use forms of energy that are measurable using conventional technology. The second class, the putative (or subtle) energy modalities, claims to measure or manipulate forms of energy that have not been definitively, scientifically measured. Putative energy modalities, such as reiki, healing touch, and quantum touch, are the focus of this article because they are the best-studied approaches to date. For many practitioners of energy medicine, these categorizations seem arbitrary; some claim that means do in fact exist (eg, semiconducting quantum interference devices, orgone boxes, special types of galvanometers, and Kirlian photography) for measuring the subtle energy of the body.⁷ Key concepts common to many biofield/energy modalities are outlined in **Box 1**.

TYPES OF BIOFIELD/ENERGY THERAPIES

Table 1 lists modalities that are commonly classed as energy healing modalities, with brief descriptions.

MECHANISM OF ACTION

It is well known that the body emits and is influenced by energy. ECG, EEG, EMG, MRI, and numerous other diagnostic and therapeutic interventions make use of the energetic properties of the body. If two people are in close proximity, each person's EEG and EKG patterns will influence the other's.⁸ Living things are known to release different quantities of light energy, or biophotons.⁹ Pulsed magnetic-field therapy has been used to facilitate healing of challenging fractures for many years.¹⁰ However, there is no single, scientifically validated theory of how putative energy modalities might work. Scientific theories about energy medicine's mechanisms of action abound; many of them hold that biofield energy lies somewhere on the electromagnetic spectrum. Many draw heavily from the findings and theories of quantum physics.

The Biofield Hypothesis

The biofield hypothesis is one explanatory model that draws from physics to conceptualize how subtle energy arises and behaves:

The biofield is defined here as the endogenous, complex dynamic electromagnetic (EM) field resulting from the superposition of component EM fields of the organism... The components of the biofield are the EM fields contributed by each individual oscillator or electrically charged, moving particle or ensembles of particles of the organism (ion, molecule, cell, tissue, and so forth), according to principles of conventional physics. The resulting biofield may be conceived of as a very complex dynamic standing wave. It has a broad spectral bandwidth, being composed of many different EM frequencies, analogous to a musical symphony with many harmonics that change over time.¹¹

Biofield models attempt to account for the nonlinear, self-organizing, and dynamic qualities that define biologic systems; in a way, they attempt to characterize a more

Box 1**Key concepts common to many biofield/energy modalities**

- Energy workers hold that, in addition to the physical body, an energy body exists that has a direct influence on health. Problems with the energy body can precede physical problems. Similarly, a positive change at the energetic level can lead to physical healing.
- The energy body is described in terms of its own anatomy. Different levels of energy fields (the aura) are commonly described, as are chakras, which are centers of energy whose roles vary according to their location in or around the body. Some modalities, such as acupuncture, focus on meridians, or energy channels, that course through the body.
- The energy body is in constant flux according to individuals' emotional, physical, mental, and other states. It is held that energy follows the intentions of both the healer and the person receiving the healing.
- Energy workers use a variety of techniques to perceive the energy body. Some healers profess to see energy, where others feel it by touch or hear information that guides therapy. Intuition is highly valued. Many therapists use muscle testing, in which a particular muscle group's strength is tested in response to a given question. A decrease in strength is said to indicate a negative answer. Some therapists use dowsing, in which the movement of a pendulum or other object is said to reflect the quantity or direction of energy flow.
- Many biofield therapists hold that they can maneuver the energy body through various means. Some claim to do so simply by directing their intention; others use their hands. Stones, tuning forks, colors, visualization exercises, chanting, breathing practices, and many other approaches may also be used.
- Most healers have experienced a health crisis, or healer's journey, themselves that led to their energy medicine interest and/or skills.
- Some healers begin sessions with a detailed intake form, covering the medical and other past history of the person to receive healing. Others will simply focus on where they are drawn by intuition.
- Training in various modalities varies. Some practices, such as healing touch, require years of training, with hundreds of hours of documented time with clients required for certification. Many healers describe what they do as a gift that they have cultivated without formal training.
- Often, energy healers will warn that health conditions will worsen briefly after treatment before improving.
- Energy healing can complement allopathic approaches. Many hospitals incorporate reiki, therapeutic touch, or healing touch, particularly to help people before or after surgery or cancer treatment.
- Problems may arise when patients defers biomedical interventions for an extended period of time to pursue energy modalities.
- Nonlocality (described later) is intrinsic to biofield healing. Many energy workers claim they can assist their clients without being in physical proximity to them.
- Spirituality often comes into play in energy healing sessions. Some healers claim to be assisted by non-physical beings (sometimes referred to as guides or angels) who guide the healing process. Some healers also discuss the roles played by past life experiences, reincarnation, or karma.
- In a typical healing encounter, the person receiving energy work may perceive physical sensations, such as tingling, temperature changes, pressure, or other sensory impressions. Intense emotional experiences and memories may also surface.

Data from Refs.^{4,8-14}

Table 1	
Energy healing modalities	
Energy Modality	Description and Related Web Site^a
Acupuncture/ acupressure	Needles are inserted into points that are said to be located along different meridians, or energy channels, within the body. In electroacupuncture, electricity is passed through the needles. In acupressure, the points are stimulated by touch. http://www.yinyanghouse.com/
Emotional freedom technique, thought field therapy	Created by Gary Craig and Roger Callahan, respectively. Tapping of various meridian points is said to release stored negative emotional energy. http://www.emofree.com/ , http://www.rogercallahan.com/index.php
Polarity therapy	Based on the work of Randolph Stone. Combines diet, exercise, and other techniques to optimize the health of the energy field. http://www.polaritytherapy.org/
Reiki	Originated in Japan with Mikao Usui. Trainees are given attunements said to allow them to pass universal healing energy through them to others. Many different schools exist. http://www.reiki.com/
Therapeutic touch	Developed by Dolores Krieger, a nurse, and Dora Kunz in the 1970s. Gentle touch is used to influence the biofield. http://www.therapeutictouch.org/
Healing touch	Developed in the 1980s by Janet Mentgen, a registered nurse. Based on principles used in therapeutic touch and other such techniques. Extensive instruction and training required for certification. http://www.healingtouchinternational.org/
Quantum touch	Created by Richard Gordon. Energy is directed through intention, breath work, and other techniques. Strong focus on musculoskeletal issues, among others. http://www.quantumtouch.com/
Barbara Brennan School of Healing.	Focuses on energy healing according to detailed descriptions of energy anatomy and flow. There are many schools of healing based on the experiences/techniques of a specific individual and this is one example. http://www.barbarabrennan.com/
Flower essences	Various flower extracts are said to influence people according to the nature/energy of their plants of origin. http://www.bachcentre.com/
Eye movement desensitization and reprocessing	Rapid alternation of eye movements from left to right and tapping of specific groups of points on the body are used in various patterns to release energy-based problems. http://www.emdr.com/
Crystal therapy/gem therapy	Use of minerals to influence the energy field. Different stones are thought to have specific vibrational properties. http://healing.about.com/od/crystaltherapy/Crystal_Therapy.htm
Qi gong	Enlists various precise body movements to alter one's capacity to store and manipulate qi, or energy. http://www.qigonginstitute.org/main_page/main_page.php
Reflexology	Certain parts of the feet, believed to correlate with various body parts are massaged or treated with essential oils. http://www.reflexology-usa.org/
Shamanic healing	Often classed as a spiritual, rather than energetic, modality. The healer intuitively determines the source of a health problem and enlists ritual, helpful spirits, journeys to the spirit world, or other techniques to bring about healing. http://www.shamanresource.com/

^a Although some of the Web sites listed do include some research data, they are provided primarily as a way for readers to familiarize themselves with various modalities in greater detail. This list is by no means comprehensive. Many complementary/alternative medicine therapies can be considered to be energy-based in part. Medical systems, such as Ayurveda, Traditional Chinese Medicine, and homeopathy incorporate energy medicine in various ways. Many schools of yoga and meditation also involve energy awareness and manipulation.

sophisticated form of the homeostasis seen at a cellular level. The biofield hypothesis posits that the complex interplay of events on a small scale causes emergent properties (characteristics of a living organism, such as consciousness, relationships with others, the creation of meaning, and one's overall state of health) to arise.

Nonlocality and Entanglement

Central to many putative energy modalities is the idea that energy can be manipulated through various means. Many traditions teach that this can even occur without direct contact between a healer and the person receiving healing. *Non-locality* is a term used to describe interactions between two entities that do not depend on spatial proximity. *Entanglement* is a physics term used to describe a connection between two particles that somehow exists even though the particles are separated across space. Entanglement was first noted in a 1982 experiment by Aspect.¹² It was found that two electrons that were initially in contact with one another would continue to influence one another once separated. Changing the spin of one electron would spontaneously lead to a change in the spin of another, even though they were separated by great distances.

Human research that focuses on these principles, although controversial, bears mentioning. A 1994 study featured in *Physics Essays* suggested that human interactions may lead to a form of entanglement or connection.¹³ Seven pairs of subjects were tested in two different scenarios. For the first part of the experiment, the subjects were not allowed to meet each other. Subjects were asked to relax in chairs in Faraday chambers, electromagnetically isolated rooms, that were 14.5 m apart. One subject was shown a series of 100 randomly timed flashing lights, and during the flashes, both subjects' electroencephalogram (EEG) tracings were taken. As might be expected, there was no correlation between EEG signals in response to the flashing lights.

However, this changed for some pairs of subjects in the second part of the experiment. For this phase of the experiment, the two test subjects were given time to meet one another. This included 20 minutes to "get to know one another in meditative silence." It was found that if the subjects spent time together and if they both felt they had good rapport (this occurred in two of seven pairs), they seemed to establish and maintain a nonlocal connection to one another. As one subject watched the 100 random flashing lights in the shielded chamber, their partner, 14.5 m away, also had an EEG response in the occipital cortex over the first several milliseconds of light exposure. For the first 72 milliseconds after exposure, the p value was 0.005, and at 132 milliseconds, it was 0.009. The authors concluded that it was possible for nonlocal interactions to occur between two human brains.

The methodology for the 1994 study has been challenged, but findings have been replicated elsewhere. In 2004, Radin followed the EEG results of 13 pairs of subjects after they had been asked to "maintain a feeling of connectedness" with one another for a period of time. Three of the pairs had EEG correlations that were statistically significant.¹⁴

Another study, conducted in Hawaii, raises the possibility that energy healing can have nonlocal effects. Eleven healers, from a variety of traditions, who claimed they could connect with or heal others from a distance, were asked to select a person with whom they felt a "strong connection." Recipients were placed in a functional MRI scanner and then the healers were asked to send "distant intentionality" to them at random 2-minute intervals. The recipients were not aware of when this was to happen. The p value for differences in MRI findings for the "send" and "no send" periods was 0.000127. It was noted that intention on the part of the healer activated

the recipients' brains at the anterior and middle cingulate, precuneus, and frontal areas.¹⁵

Biofield Awareness

In considering claims made by energy medicine providers, one must ask not only whether or not the biofield exists but if it is possible for people to detect it. Study findings are mixed, but many suggest it is possible. A 2005 study had 165 undergraduates complete a battery of six biofield awareness tasks. These included having experimenters place their hands near a subject and evaluating awareness of the hands' proximity, detecting being stared at, and predicting others' intentions. Overall accuracy was 10.3% above chance. Subjects' sensitivity correlated with survey measures of self awareness and sensitivity to others, although most subjects underestimated how they would perform.¹⁶ It has been noted, in the brain and in other organs, such as the heart, that the autonomic nervous system exhibits a response before certain randomly presented emotional stimuli are sensed.¹⁷ How this might related to human healing remains to be explored.

Table 2 summarizes some proposed mechanisms of action for energy medicine modalities.

ENERGY MEDICINE'S EFFICACY: THE STATE OF THE RESEARCH

Most reviews of the most commonly researched energy therapies conclude that, although research findings show that such interventions are promising more research is needed. For example, a 2007 review concluded that studies of therapeutic touch, healing touch, and reiki are quite promising; however, at this point, they can only suggest that these healing modalities have efficacy in reducing anxiety; improving muscle relaxation; aiding in stress reduction, relaxation, and sense of well-being; promoting wound healing; and reducing pain.²⁹

Research in energy medicine is gaining momentum, and increasing numbers of good-quality studies are emerging. The National Institutes of Health National Center for Complementary Alternative Medicine has funded the Center for Frontier Medicine in Biofield Science at the University of Arizona in Tucson.³⁰ Standards for performing biofield research have been outlined.³¹ As with many modalities for which research is limited, the potential role of energy modalities within Western health care remains hotly debated.

GENERAL REVIEWS

A 2003 publication by Benor and Crawford evaluated 2200 published reports on energy medicine, spiritual healing, distant healing and prayer, concluding that most studies had weak designs, but the results indicated that further study with sounder methodologies were warranted.³² In a summary of their findings, they stated that there is evidence, though not conclusive, to suggest an interaction between mind and matter consistent with the claims of many energy healing modalities. They suggested that, based on their review of that data, effects of intention on nonliving systems are small (<1%) but skin conductance and the autonomic nervous systems of living organisms are more strongly affected. In general, the reviewers suggested that effects of various forms of spiritual and energy healing are likely smaller than reported in the literature at the time (2003). The need for more, higher-quality research was emphasized.³³

A systematic review of distant healing, published in 2000, included 23 trials that met inclusion criteria. Reviewers found a positive treatment effect in 13 of the trials, which

Table 2	
Proposed mechanisms of action for putative energy medicine modalities^a	
Mechanism	Comment
Healing alters the body's electromagnetic field.	Magnetometers known as SQUIDS (superconducting quantum interference devices), although controversial, are said to measure large frequency biomagnetic fields radiating from therapeutic touch providers. ¹⁸ Practitioners of yoga and qi gong seem to be able to radiate fields 1000 times stronger than average, in a frequency range that has also been linked to speeding healing of biologic tissues. ¹⁹
Energy healing alters gamma wave release, particularly by potassium-40, the body's main gamma-wave source.	Studies indicate an increase in gamma release during healing sessions. ^{6,7,20}
Energy healing influences the release of biophotons. ²¹	It is known that biophoton release increases in stressed cells; it is correlated with oxidative stress. ²² Long-term practitioners of transcendental meditation have been noted to have much lower levels of biophoton emission than controls ²³ Biophotons are thought to contribute energy to electron clouds surrounding the atoms in blood. ²⁴
Energy work decreases entropy.	A 2003 study hypothesized that healing intention might lead to alterations in entropy, measured as the number of times that a random event generator (REG) produced more organized patterns than would be expected by chance alone. An REG placed in a healer's office had significantly more ordered patterns than one placed in a library, when all other variables were controlled. This pattern proved true for three separate 3-month studies. ²⁵
Healers help patients entrain with the magnetic field of the earth.	The earth's Schumann resonance and a brain in an alpha wave pattern cycle at roughly 7–10 Hz. ²⁶
Energy medicine arises through the transmission of signals through a living matrix of connective tissues, including the perineurium and myofascial tissue.	The myofascial and other tissues have properties similar to crystals and function as semiconductors. Piezoelectricity, which arises when semiconducting crystalline lattices are moved in some way, may transmit energy. This is also thought to be true at the cellular level, with signal transfer that can occur throughout the body via cellular microtubules. ^{7,27,28}
The vibration of the healer entrains with the recipient of healing and favorably alters the recipient's energetic state.	There is evidence to show that EEG synchrony between bioenergy practitioners and clients occurs during healing. ⁸ One theory proposed by Oschman suggests that during meditation or other mindful states, molecules vibrating throughout the body will entrain or harmonize, creating more balanced (healthier) frequencies. ²⁸

^a This list is just a small sampling of popular theories. Other mechanisms have been proposed, including alterations in electron-excited states, quantum coherence, and the ability of biologic systems to function as lasers.

Data from Oschman J. Energy medicine in therapeutics and human performance. Edinburgh: Butterworth Heinemann; 2003.

involved a total of 2774 subjects.³⁴ A 2003 follow-up incorporating additional studies concluded that “Collectively they shift the weight of the evidence against the notion that distant healing is more than a placebo.”³⁵ Study findings continue to be hotly debated several years later.

Other reviews have been mixed. A 2000 review of 37 trials, 22 of which were accessible as published reports, found that 10 of them showed a significant effect. The studies varied greatly in intervention, outcomes measures, and study length. Methodological shortcomings were common, and it was concluded that no firm conclusions could be drawn based on the randomized controlled trials featured in the study.³⁶ Similarly, a series of meta-analyses published in 2003 indicated that most of the studies were of poor quality, although many studies had significant effect sizes.³⁷

A 2008 Cochrane review of touch therapies for pain evaluated five healing touch, 16 therapeutic touch, and five reiki trials that met criteria. The total number of subjects in these studies was 1153. Pain was reduced an average of 0.83 points on a 10-point rating scale (95% CI -1.16 to -0.5). There was a significant decrease in two out of five studies that evaluated analgesic use. No significant placebo effect was found. The review concluded that “touch therapies may have a modest effect on pain relief.”³⁸

RESEARCH FOCUSING ON SPECIFIC MODALITIES

Therapeutic touch (TT), reiki, and healing touch (HT) are perhaps the most commonly used energy medicine therapies in the United States. These therapies, often referred to together as touch therapies, have been the focus of several studies. Qi gong has also been gaining popularity in the United States.

Therapeutic Touch

As noted earlier, therapeutic touch trials have been reviewed en masse with other energy medicine studies, but individual meta-analyses specifically related to TT are less common. A 2008 review that looked at other modalities also concluded that TT “...does help reduce pain and anxiety,”³⁹ but a Cochrane review found an insufficient number of studies to allow conclusions to be drawn about whether or not TT was beneficial for anxiety.⁴⁰ A 2003 Cochrane review did not find TT to be helpful in healing acute wounds.⁴¹

A few positive findings exist. One 2005 study did indicate that two 5- to 7-minute sessions a day of TT proved helpful for certain behaviors (vocalizations and repetitive hand movements) in subjects who had dementia.⁴² A 1999 meta-analysis of 13 studies (with numerous methodological problems) noted the average study effect size for TT in a variety of scenarios was 0.39, which was described as moderate.⁴³

Perhaps no research in energy medicine has generated more controversy than the Rosa Therapeutic Touch Study.⁴⁴ This 1998 study, featured in the *Journal of the American Medical Association*, documented the findings of a fourth-grade science project that set out to explore whether TT practitioners could sense the presence of another person’s energy field. Twenty-one TT providers were tested by being asked to lay their hands on a table. The experimenter sat opposite the subjects behind a screen, and based on a coin toss, placed a hand 8 to 10 cm over the healer’s left or right hand. Healers were asked to identify which of their hands was in proximity to the experimenter’s. For 280 trials, there were 123 correct responses, with a success rate of 44%. The study concluded that, “Twenty-one experienced TT practitioners were unable to detect the investigator’s energy field. Their failure to substantiate TT most

fundamental claim is unrefuted evidence that the claims of TT are groundless and that further professional use is unjustified.”

The study’s conclusions have been subject to a great deal of discussion and debate. Some arguments against its conclusions include

- Statistical analysis was not accurate.⁴⁵
- Lack of understanding of mechanism of action does not equate to lack of efficacy.
- Experimenter beliefs have been found to influence the outcomes of such studies.⁴⁶
- Some research indicates that therapies are much less likely to be effective if the person receiving energy is either skeptical or in a negative state of mind.
- The study focused on sensitivity to the presence of one person by a small group of healers; generalizability is not clear.
- The study did not actually gauge healing ability per se.

Regardless of one’s interpretation of the study’s findings, the debate it generated speaks to the level of controversy that surrounds biofield therapies.

Reiki

Reiki is one of the most popular biofield modalities in the United States and it is used in several hospital and community programs.⁴⁷ It has been subject to several systematic reviews, most of which are unable to draw conclusions about efficacy. Lee and colleagues,⁴⁸ reviewed all reiki study data through November 2007 and identified 205 relevant studies, of which nine randomized clinical trials (RCT) met inclusion criteria. The review concluded that trial data are scarce for any one condition, with a lack of independent replications. Methodological flaws were common. Ultimately, it was concluded that “...the value of reiki remains unproven.”

Vitale conducted a 2007 review that divided reiki studies into categories, with the following conclusions⁴⁹

- Stress/relaxation and depression: one significant and three nonsignificant findings.
- Wound healing: only one nonsignificant study noted.
- Pain: one study with significant findings for acute pain; for chronic pain one study showed significant benefit and two studies did not.
- Change in biologic correlates: studies involving autonomic nervous system measurements are weak, as are those exploring reiki effects on hemoglobin. (A recent rat study indicated that reiki can improve heart rate homeostasis.)⁵⁰

A recent study on reiki and fibromyalgia also did not find reiki to be of benefit.⁵¹

Healing Touch

As of 2002, there were over 67,000 HT providers in the United States.⁵² Healing Touch International⁵³ routinely publishes a research survey and also makes research summaries available online.⁵⁴

A 2004 review concluded that, although there were no generalizable results from more than 30 available studies of HT, the therapy holds promise.⁵⁵ Some studies subsequent to the review are worth noting. A 2004 evaluation of the effects of HT on indicators of well-being for 78 women who had gynecologic cancers and were undergoing radiation therapy found statistically significant improvements in vitality, pain, and physical functioning in the HT group compared with controls.⁵⁶ Another randomized clinical trial indicated that anxiety scores and length of stay were decreased in 237 hospitalized study subjects randomized to three groups when

Box 2**Guidelines for advising patients about energy medicine or making a referral**

- Become generally familiar with the forms of energy medicine your patients are most likely to use, so that you can converse with them about their experiences. In addition to the modality-specific Web sites listed in **Table 1**, some other generally useful Web resources to consider include
 - Alternative Medicine Foundation resource guide on energy work <http://amfoundation.org/energywork.htm>
 - Association for the Scientific Study of Consciousness <http://assc.caltech.edu/>
 - British Psychological Society <http://www.warwick.ac.uk/cep>
 - Committee for the Scientific Investigation of Claims of the Paranormal <http://www.csicop.org/>
 - http://www.princeton.edu/_rdnelson/gcpintro.html
 - Institute of Noetic Sciences <http://www.noetic.org/>
 - International Society for the Study of Subtle Energies and Energy Medicine <http://www.isseem.org/>
 - Society for the Anthropology of Consciousness http://sunny.moorpark.cc.ca.us/_jbaker/sac/home.html
 - Princeton Engineering Anomalies Research http://www.princeton.edu/_pear/index.html
 - Samuelli Institute for Information Biology <http://www.siib.org>
- Take time to meet biofield therapists in your community. Consider experiencing a session yourself.
- Evaluate healers' qualifications.
 - How much time have they spent in training?
 - Are they licensed or certified?
 - How is their knowledge of biomedicine? Providers of therapeutic touch, healing touch, and other modalities often have extensive backgrounds in nursing or other health care fields and know a great deal about anatomy, physiology, and pathology.
- Establish a dialog with a healer about shared patients, with patients' permission. Do they keep written records and are they willing to share them?
- Energy medicine is quite safe and can be considered for most complaints, but use caution in patients who have significant psychiatric disorders. Consider energy medicine when
 - A biomedical diagnostic workup has not been revealing.
 - Symptoms seem unrelated, vague, or in flux.
 - Patients make it clear that such an approach would resonate with their belief systems.

Based in part on information from Rakel D, Rindfleisch J. Integrative medicine. In: Rakel RE, editor. Essential of family medicine. 3rd edition. Philadelphia: Elsevier; 2006. p. 132–41.

they were assigned to the HT group. However, there was not a significant decrease in pain medication, antiemetic use, or atrial fibrillation incidence.⁵⁷

Qi Gong

A few reviews have indicated a benefit from qi gong. A 2007 review on qi gong for pain conditions found that “All RCTs of external qi gong demonstrated greater pain

Table 3		
Patient-oriented practice recommendations^a		
Recommendation/Conclusion	Evidence Rating	References
Energy medicine modalities can be useful when integrated with primary care medicine	C	DiNucci ⁴ Benor ⁵ Jonas & Crawford ³³ Myss ⁶⁰
Biofield therapies share many common principles and assumptions	C	DiNucci ⁴ Myss ⁶⁰ Rakel & Rindfleisch ⁶¹ Mentgen ⁶² Brennan ⁶³ Feinstein et al ⁶⁴ Bruyere ⁶⁵ Warber et al ⁶⁶
Energy medicine is safe.	C	DiNucci ⁴ Benor ^{5,6} Jonas & Crawford ³² Myss ⁶⁰ Mentgen ⁶² Brennan ⁶³ Feinstein et al ⁶⁴ Bruyere ⁶⁵ Warber et al ⁶⁶
Nonlocal connections can be formed between pairs of people	B	Zylberbaum et al ¹³ Radin ¹⁴
Healers can influence, at a distance, the fMRI readings of people with whom they feel a close connection	B	Achlerberg et al ¹⁵
Some people seem to be aware of a biofield around themselves and others	B	Nelson & Schwartz ¹⁶
Energy medicine modalities can influence skin conductance and autonomic function, but are less likely to affect inanimate systems	A	Jonas & Crawford ³³
Distant healing is more than just the placebo effect	B	Ernst ³⁵
Touch therapies modestly decrease pain (roughly 1 point on the 10-point scale)	A	So et al ³⁸
Therapeutic touch helps reduce pain and anxiety	C	Jackson et al ³⁹
Therapeutic touch does not heal acute wounds	A	O'Mathuna & Ashford ⁴¹
Therapeutic touch may decrease some behavioral symptoms in dementia patients	B	Woods et al ⁴²
Healing touch improves wellbeing measures for women with gynecologic cancers undergoing radiation therapy	A	Cook et al ⁵⁶
Healing touch decreases anxiety scores in hospitalized cardiac patients, but not pain, anti-emetic use, or atrial fibrillation	A	MacIntyre et al ⁵⁷
Qigong decreases chronic pain	B	Lee et al ⁵⁸

^a Based on the current state of the research, it is difficult to draw conclusions about the efficacy of biofield therapies for most health conditions. Different studies have conflicting results and methodological problems are common.

reductions in the qigong groups compared with control groups. Meta-analysis of two RCTs showed a significant effect of external qigong compared with general care for treating chronic pain."⁵⁸ Another review of qi gong for use in cancer care found trials that met inclusion criteria had variable methodological quality, and all of them focused on palliative/supportive care, not curative treatment. Two trials suggest that life might be prolonged, but research quality was not sufficient to support a definitive conclusion.⁵⁹

ADVERSE EFFECTS

In general, biofield/energy modalities are thought to be quite safe. There are no reports of these interventions leading to morbidity or mortality of any duration.⁴ It is not uncommon for intense emotions to arise during sessions, and many providers suggest biofield therapies should be used with caution in people who have psychoses. Patients may feel quite fatigued or dizzy after a session and many practitioners note that symptoms can momentarily worsen before they begin to improve. Recipients of energy healing often find themselves needing to confront difficult past experiences. Perhaps the most dangerous aspect of energy medicine is that there have been reports of poor outcomes when it is relied on in acute, life-threatening situations for which allopathic interventions would have a greater likelihood of decreasing morbidity and mortality.

ENERGY MEDICINE MODALITIES AND PRIMARY CARE

Box 2 outlines guidelines for practitioners advising their patients regarding the use of energy medicine modalities. **Table 3** lists patient-oriented practice recommendations.

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REFERENCES

1. Walsh R. *The World of Shamanism: new views of and ancient traditions*. Woodsbury (MN): Llewelyn; 2007.
2. Barnes PM, Bloom B. Complementary and alternative medicine use among adults and children: United States, 2007. *National Health Statistics Reports* 2008;12. Available at: <http://nccam.nih.gov/news/2008/nhsr12.pdf>. Accessed August 20, 2009.
3. Barnes P, Powell-Griner E, McFann K, et al. Complementary and alternative medicine use among adults: United States, 2002. *Semin Integr Med* 2004;2(2):54–71.
4. DiNucci EM. Energy healing: a complementary treatment for orthopaedic and other conditions. *Orthop Nurs* 2005;24(4):259–69.
5. Benor DJ. Energy medicine for the internist. *Med Clin North Am* 2002;86(1):105–25.
6. Energy medicine: an overview. Available at: <http://nccam.nih.gov/health/whatiscam/energy/energymed.htm>. Accessed August 20, 2009.
7. Oschman JL. *Energy medicine: the scientific basis*. New York: Churchill Livingstone; 2002.
8. Russek L, Schwartz G. Energy cardiology: a dynamical energy systems approach for integrating conventional and alternative medicine. *Adv Mind Body Med* 1996;12(4):4–24.

9. Creath K, Schwartz GE. Biophoton images of plants: revealing the light within. *J Altern Complement Med* 2004;10(1):23–6.
10. Bassett CA, Mitchel SN, Gaston SR. Pulsing electromagnetic field treatment in ununited fractures and failed arthrodeses. *JAMA* 1982;247:623–8.
11. Rubik B. The biofield hypothesis: its biophysical basis and role in medicine. *J Altern Complement Med* 2002;8(6):703–7.
12. Aspect A, Dalibard J, Roger S. Experimental test of Bell's inequalities using time-varying analysers. *Phy Rev Lett* 1982;49:1804–7.
13. Zylberbaum JG, Delaflor M, Attie L, et al. The Einstein-Podolsky-Rosen paradox in the brain: the transferred potential. *Phys Essays* 1994;7(4):422–8.
14. Radin D. Event-related electroencephalographic correlations between isolated human subjects. *J Altern Complement Med* 2004;10:315–23.
15. Achterberg J, Cooke K, Richards T, et al. Evidence for correlations between distant intentionality and brain function in recipients: a functional magnetic resonance imaging analysis. *J Altern Complement Med* 2005;11(6):965–71.
16. Nelson LA, Schwartz GE. Human biofield and intention detection: individual differences. *J Altern Complement Med* 2005;11(1):93–101.
17. McCraty R, Atkinson M, Bradley RT. Electrophysiological evidence of intuition: part 2. A system-wide process? *J Altern Complement Med* 2004;10(2):325–36.
18. Zimmerman J. Laying-on-of-hands healing and therapeutic touch: a testable theory. *BMEI currents*. *J BioElectroMagnetics Institute* 1990;2:8–17.
19. Sisken BF, Walder J. Therapeutic aspects of electromagnetic fields for soft tissue healing. In: Blank M, editor. *Electromagnetic fields: biological interactions and mechanisms*. Washington, DC: American Chemical Society; 1995. p. 277–85.
20. Benford MS. Radiogenic metabolism: an alternative cellular energy source. *Med Hypotheses* 2001;56(1):33–9.
21. Choi C, Woo WM, Lee MB, et al. Biophoton emission from the hands. *J Korean Phys Soc* 2002;41(2):275–8.
22. Van Wijk R, Tilbury RN, Slawinski J, et al. Biophoton emission, stress and disease: a multi-author review. *Experientia* 1992;48:1029–102.
23. van Wijk EP, Koch H, Bosman S, et al. Anatomic characterization of human ultra-weak photon emission in practitioners of transcendental meditation and control subjects. *J Altern Complement Med* 2006;12(1):31–8.
24. Curtis BD, Hurtak JJ. Consciousness and quantum information processing: uncovering the foundation for a medicine of light. *J Altern Complement Med* 2004;10(1):27–39.
25. Crawford C, Jonas W, Nelson R, et al. Alterations in random event measures associated with a healing practice. *J Altern Complement Med* 2003;2(3):345–53.
26. Sentman DD. Schumann resonances. In: Volland H, editor, *Handbook of atmospheric electrodynamics*, vol. 1. Boca Raton (FL): CRC Press; 1995. p. 267–95.
27. Oschman J. *Energy medicine in therapeutics and human performance*. Edinburgh: Butterworth Heinemann; 2003.
28. Oschman JL. Clinical aspects of biological fields: an introduction for health care professionals. *J Bodyw Mov Ther* 2002;6(2):117–25.
29. Engebretson J, Wardell DW. Energy-based modalities. *Nurs Clin North Am* 2007;42(2):243–59.
30. Center for Frontier Medicine in Biofield Science. University of Arizona in Tucson. Available at: <http://www.biofield.arizona.edu/CFMBS>. Accessed August 20, 2009.
31. Jonas WB, Chez RA. Recommendations regarding definitions and standards in healing research. *J Altern Complement Med* 2004;10(1):171–81.

32. Jonas WB, Crawford CC, editors. *Healing, intention and energy medicine: science, research methods, and clinical implications*. New York: Churchill Livingstone; 2003.
33. Jonas WB, Crawford C. Science and spiritual healing: a critical review of spiritual healing, "energy medicine," and intentionality. *Altern Ther Health Med* 2003;9(2): 56–61.
34. Astin JA, Harkness E, Ernst E. The efficacy of "Distant Healing": a systematic review of randomized trials. *Ann Intern Med* 2000;132(11):903–10.
35. Ernst E. Distant healing—an "update" of a systematic review. *Wien Klin Wochenschr* 2003;115(7–8):241–5.
36. Abbot N. Healing as a therapy for human disease: a systematic review. *J Altern Complement Med* 2000;6(2):159–69.
37. Jonas WB, Crawford CC. Science and spiritual healing: a critical review of spiritual healing, "energy" medicine, and intentionality. *Altern Ther Health Med* 2003; 9(2):A56–71.
38. So PS, Jiang Y, Qin Y. Touch therapies for pain relief in adults. *Cochrane Database Syst Rev* 2008;(4):CD006535.
39. Jackson E, Kelley M, McNeil P, et al. Does therapeutic touch help reduce pain and anxiety in patients with cancer? *Clin J Oncol Nurs* 2008;12(1):113–20.
40. Robinson J, Biley FC, Dokk H. Therapeutic touch for anxiety disorders. *Cochrane Database Syst Rev* 2007;(3):CD006240.
41. O'Mathuna DP, Ashford RL. Therapeutic touch for healing acute wounds. *Cochrane Database Syst Rev* 2003;(4):CD002766.
42. Woods DL, Craven RF, Whitney J. The effect of therapeutic touch on behavioral symptoms of persons with dementia. *Altern Ther Health Med* 2005;11:66–74.
43. Winstead-Fry P, Kijek J. An integrative review and meta-analysis of therapeutic touch research. *Altern Ther Health Med* 1999;5(6):58–67.
44. Rosa L, Rosa E, Sarner L, Barrett S. A close look at therapeutic touch. *JAMA* 1998;279:1005–10.
45. Cox T. Applying skeptical thinking to Emily Rosa's therapeutic touch study: a nurse-statistician reanalyzes the data. *Altern Ther Health Med* 2002;9(1):58–64.
46. Dossey L. Therapeutic touch at the crossroads: observations on the Rosa study. *Altern Ther Health Med* 2003;9(1):38–9.
47. Miles P, True G. Reiki- Review of a biofield therapy: history, theory, practice, and research. *Altern Ther Health Med* 2003;9(2):62–72.
48. Lee MS, Pittler MH, Ernst E. Effects of Reiki in clinical practice: a systematic review of randomised clinical trials. *Int J Clin Pract* 2008;62(6):947–54.
49. Vitale A. An integrative review of Reiki touch therapy research. *Holist Nurs Pract* 2007;21(4):167–79.
50. Baldwin AL, Wagers C, Schwartz GE. Reiki improves heart rate homeostasis in laboratory rats. *J Altern Complement Med* 2008;14(4):417–22.
51. Assefi N, Bogard A, Goldberg J, et al. Reiki for the treatment of fibromyalgia: a randomized controlled trial. *J Altern Complement Med* 2008;14(9):1115–22.
52. Mentgen JL. Healing touch class news. *Healing Touch Newsletter* 2002;2(1):6.
53. Healing touch international. Available at: <http://www.HealingTouchInternational.org>. Accessed August 20, 2009.
54. Wardell DW. *Healing touch research survey*. 9th edition. Houston (TX): Healing Touch International; 2008.
55. Wardell DW, Weymouth KF. Review of studies of healing touch. *J Nurs Scholarsh* 2004;36(2):147–54.

56. Cook CA, Guerrero JF, Slater VE. Healing touch and quality of life in women receiving radiation treatment for cancer: a randomized controlled trial. *Altern Ther Health Med* 2004;10(3):34–40.
57. MacIntyre B, Hamilton J, Fricke T, et al. The efficacy of healing touch in coronary artery bypass surgery recovery: a randomized clinical trial. *Altern Ther Health Med* 2008;4(4):24–32.
58. Lee MS, Pittler MH, Ernst E. External qigong for pain conditions: a systematic review of randomized clinical trials. *J Pain* 2007;8(11):827–31.
59. Lee MS, Chen KW, Sancier KM, et al. Qigong for cancer treatment: a systematic review of controlled clinical trials. *Acta Oncol* 2007;46(6):717–22.
60. Myss CM. *Anatomy of the spirit. The seven stages of power and healing.* New York: Random House; 1996.
61. Rakel D, Rindfleisch J. Integrative Medicine. In: Rakel RE, editor. *Essential of family medicine.* 3rd edition. Philadelphia: Elsevier; 2006. p. 132–41.
62. Mentgen JL. Healing touch. *Nurs Clin North Am* 2001;36(1):143–58.
63. Brennan BA. *Hands of light: a guide to healing through the human energy field.* New York: Bantam Dell; 1993.
64. Feinstein D, Eden D. Six pillars of energy medicine: clinical strengths of a complementary paradigm. *Altern Ther Health Med* 2008;14(1):44–54.
65. Bruyere RL. *Wheels of light: chakras, auras, and the healing energy of the body.* New York: Fireside; 1994.
66. Warber C, Deogracia C, Straughn J, et al. Biofield energy healing from inside. *J Altern Complement Med* 2004;10(6):1107–13.