

C6. BIOENERGETIC MEDICINES

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This module provides guidelines and resources for education to medical students about medical therapies using low-level energetic fields known commonly as **energy medicine**.

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SUGGESTED LEARNING OBJECTIVES

Upon completion of the bioenergetic medicines learning components of the curriculum, medical students should be able to:

- understand the concept of subtle energy, the vital force, *qi*, and *prana* and their roles in medicine, now and historically.
- define the terms bioelectromagnetic medicine, biofield therapies, biofield, frequency, electromagnetic field, magnet therapy, medical qigong, Reiki, therapeutic touch, and external qi.
- explain how energy medicine works according to our present scientific understanding and discuss what scientific questions and controversies still remain, discussing the scientific loopholes in studying bioenergetic fields.
- understand what skeptics say about energy medicine, and what scientific arguments are used to refute those claims.
- explain the present and most promising future applications of bioelectromagnetic therapies, citing some key studies showing effectiveness of bioelectromagnetic therapies.
- list the main types of biofield therapies used in the U.S. and know what they are clinically used for.
- discuss several key studies examining effectiveness of biofield therapies.
- experience some form of biofield or bioelectromagnetic energy practice.

SUGGESTED COURSE FORMAT

A majority of medical schools in the U.S. have begun introductory coursework on CAM using different approaches. Most focus on a few topics or modalities of CAM that are easy to teach or provide an epidemiologic overview. Formats include pre-orientation workshops, lunch-time lecture series, longitudinal evening or weekend workshops with faculty, student interest groups with faculty sponsors, guest speaker series, and /or medical center-sponsored CME courses open to medical students. Many of these have evolved to a more formal integration of CAM topics into the existing medical curriculum, either using longitudinal courses or electives. Schools are encouraged to design innovative approaches to introducing the CAM modalities they choose, with encouragement to provide balance in education by selecting modalities from each of the 10 core CAM categories.

Because true integration of complementary medicines can be achieved only when coursework is incorporated into the existing curriculum, AMSA suggests that schools work toward building lectures, handouts, slides, and cases that can be introduced in existing core courses. This approach allows the students to actively compare other medical systems with allopathic and osteopathic medicine and will reinforce basic science and modern clinical practice. It will also allow exposure to all students, not only those already interested in CAM. Experiential activities such as field trips, demonstrations, and lab exercises are encouraged and can be appropriately introduced to complement didactic instruction.

Faculty and community lecturers should be familiar with the topic from a traditional and clinical perspective, not merely an academic exposure. Emphasis on accurate portrayal of the CAM modality from professionals is essential to accurate teaching. The resources within this module should serve that goal and assist educators in providing timely, relevant, and professionally reviewed materials to medical students.

DEFINITIONS

Often called “energy medicine,” the two main categories of bioenergetic medicine, are (1) *bioelectromagnetic therapies*, and (2) *biofield therapies*.

Bioelectromagnetic medicine (BEM) utilizes external medical devices such as therapeutic magnets, TENS (transcutaneous electrical nerve stimulation), and pulsed magnetic fields. These devices apply extremely low-level electromagnetic fields (EM) (electrical fields of the order of microamperes or less; magnetic fields generally of the order of microTesla or less) externally to the body as therapy.

Biofield therapies (BT) refer to medicinal use of the human body’s subtle energy using a wide variety of practices, and are administered by biofield practitioners who work with the subtle energy or biofield of the patient. The concept of the human body’s subtle energy, vital force, or cosmic life energy is recognized in every medical system except allopathy. In Ayurveda, this subtle energy is known as prana, qi in traditional Chinese medicine, ki in traditional Japanese medicine, reiki in the Usui system, vital force in homeopathy, innate intelligence in chiropractic, vis medicatrix naturae in naturopathy, and olodumare in Yoruba medicine.

HISTORY, PHILOSOPHY, AND METHODS

BIOELECTROMAGNETIC MEDICINE (BEM)

BEM is an application of bioelectromagnetics, the science which investigates the interaction of extremely low-level nonionizing, externally applied EM fields with organisms, including the potential hazards as well as potential therapeutic effects. EM fields in medicine have a mixed history—some uses including radiation therapy, magnetic resonance imaging, and defibrillator devices are well known and used; historically, many other EM devices used in medicine were later relegated to quackery. In contrast to conventional EM medical devices, BEM devices operate at much lower energy levels and often in extremely low frequency ranges (1-100 Hz) compared to EM devices used in conventional medicine.

BEM is more widely known and used in Russia, Europe, and Japan than in the U.S. The most prominent BEM devices employed in the U.S. are (1) the TENS (transcutaneous electrical nerve stimulation) devices for pain control; (2) PEMF for non-union bone fractures; and (3) TCS (transcranial stimulators) or TMS (transcranial magnetic stimulators), used to treat mood disorders and insomnia.

In practice, pulsed EM fields (PEMF) or pulsed magnetic fields (PMF) are the therapeutic signals most frequently used, as they readily penetrate tissue painlessly, noninvasively, and without side effects. FDA approved for over 20 years, one of the first and most successful uses of PEMF since the 1970s is for nonunion bone fractures. Over 250,000 patients worldwide have experienced beneficial results from this treatment (Bassett, 1993, 1994).

In magnet therapy, small static magnets (typically >100 Gauss; compare to MRI magnets at 10,000 – 30,000 gauss) are used to treat pain and other conditions by placement over acupuncture points, trigger points, or painful areas of the body. Patients as well as professional health practitioners use magnet therapy or magnotherapy. A wide variety of magnetic products are marketed as consumer health products. In a landmark placebo-controlled trial conducted at Baylor College, magnet therapy was found to significantly relieve pain in post-polio syndrome patients (Vallbona et al., 1997).

BIOFIELD THERAPIES (BT)

The biofield refers to the complex, dynamic, extremely weak EM field within and around the human body that has been proposed as a super-regulator of health and healing (Rubik, 2002). Besides the EM components of the biofield emitted by the brain (EEG) and heart (ECG) that are well known in conventional medicine, the human biofield may also consist of more subtle energy fields as elaborated in Oriental Medicine, Ayurvedic Medicine, and other indigenous systems of medicine.

This subtle energy, vital force, or cosmic life energy is a key concept in many CAM modalities, and it is referred to by the many terms listed above from various medical systems (Rubik et al., 1994a). Such vitalistic principles underlie many CAM modalities besides energy medicine, but

have been banished from conventional medicine. This fundamental philosophical difference is at the root of medicine's divided legacy (Coulter, 1994).

Moreover, Eastern medical systems of philosophy, treatment and diagnosis include specific "energy anatomical" concepts that have no equivalent in the science of allopathic medicine. This includes the acupuncture meridians along which subtle energy purportedly flows and the chakras, seven key energy nodes that lie along the body's midline. Recently, scintigraphic evidence has shown some evidence for these channels connecting acupuncture points.

Biofield therapies emerged from native medicine traditions that embraced concepts of a vital force within and around the body, and are considered among the oldest forms of healing, with shamans and other healers performing laying-on-of-hands and other energetic interactions with patients. These modalities rest on the ancient belief that biofield practitioners can, by moving their hands through the patient's energy field, alter it--to remove blocks, restore energy flow, realign and balance the energy field, thereby improving health and well-being. BT does not involve massage or any physical adjustment of patients' bodies as do the manual therapies chiropractic, massage, and classic osteopathy.

In some practices, the biofield of the practitioner is employed directly in treating the patient; in others, the practitioner acts as a conduit to move what is considered to be a cosmic or spiritual life energy into the patient, or to otherwise mobilize the patient's biofield.

Modern forms of biofield therapy include such practices in the U.S. as therapeutic touch (TT), Reiki, external qi, chakra healing, Healing Touch, and SHEN therapy. These therapies may involve touching the patient's body or not, depending upon the specific practice (Rubik et al., 1994a).

Perhaps most widely known and used is therapeutic touch (TT), a technique developed by Dr. Dolores Krieger, professor of nursing at NYU, and now widely used by holistic nurses. TT involves an intentional use of the practitioner's hands to direct human energy for healing purposes without physical contact (Krieger, 1979). Over 21,000 health care professionals use TT worldwide.

Another widely used biofield therapy is Reiki (Japanese for "universal life energy"), a laying-on-of-hands technique that allegedly originated in ancient Tibet, and was rediscovered in the late 1800s in Japan (Stein, 1995).

SHEN therapy involves laying-on-of-hands to assist the patient's biofield to return to its normal flow throughout the body, as it releases deeply held or repressed emotions (Rubik et al., 1994a).

Medical qigong is a self-practice sometimes prescribed by holistic practitioners, whereby patients can work alone or with a qigong master to improve their own energy regulation through a combination of mindfulness with coordinated breathing, slow and sustained movement, and chanting exercises (Johnson, 2000; Sancier, 1996). External qi is the projection of energy from the body of a qigong master used to treat patients.

Both BEM and BT involve the noninvasive application of extremely low-level energy fields to the body for therapeutic effects, and in fact may have a common scientific basis (Rubik, 1997b). In BEM, energy fields are applied by means of DC or AC electromagnetic devices; in BT, the practitioner's biofield with its EM components may be involved. Theories of nonlinear dynamical systems from biophysics predict that such extremely small energy stimuli used in energy medicine can affect the dynamics of the human body, even dramatically, to facilitate healing. Because the energy delivered to tissues using these therapies is, in many cases, physically nonthermal, i.e., lower than the energy content of thermal noise (random molecular motion at body temperature), the information carried by the signal rather than its energy content is the key element. A concept of bio-information that goes beyond that of biomolecules and genes has been proposed (Rubik, 1995; 1997b).

MAJOR CLINICAL APPLICATIONS

Empirical results from the world clinical literature show a very wide range of applications for BEM, including treatment of the following:

- fresh bone fractures (Wahlstrom, 1984).
- soft tissue injuries (Sisken & Walker, 1995).
- chronic venous insufficiency (Dovganiuk, 1995).
- improved immune status and postoperative recovery in cancer (Lubennikov, 1995).
- osteoporosis (Bilotta, 1989).
- Alzheimer's disease (Sandyk, 1994a).
- sports injuries (Pilla and Kloth, 1997).

Results obtained depend upon EM field parameters such as frequency, modulation, waveform, intensity, duration of exposure, and duration of therapy. Pulsed magnetic fields stimulate deep tissues best, because they pass through the body unattenuated (Barker, 1991).

Pulsed EM fields (PEMF) or pulsed magnetic fields (PMF) have been used therapeutically with great benefit. Areas of application include:

- nerve stimulation for intractable pain, multiple sclerosis (Sandyk, 1997), Parkinson's disease (Sandyk, 1994b; George, 1996), and spasticity reduction in cerebral palsy.
- soft tissue repair (Lee et al., 1993), healing of surgical wounds with increased tensile strength, decubitous chronic ulcers (Salzberg, 1995), increased angiogenesis, and the healing of recalcitrant chronic venous ulcers (Cadossi, 1990; Stiller et al., 1992).
- bone repair.
- treatment of osteoarthritis, including reduction of pain, swelling, and increased mobility (Trock, 1994).
- neuroendocrine applications for epilepsy (Sandyk et al., 1992), relief from symptoms of drug withdrawal and alleviation of depression (Kirkcaldie, 1997; Conca, 1996), anxiety, and insomnia (Erman, 1991).

Clinical studies indicate that biofield therapies are especially useful for treating anxiety (Keller et al., 1990) and pain (Quinn, 1984). A very limited number of studies suggest they may also stimulate immune function (Olson, 1997), hemoglobin formation (Krieger, 1976), and facilitate the healing of wounds (Wirth, 1992).

RESEARCH SUMMARY

The majority of bioenergetic medicine trials are only pilot, prospective clinical studies, or case studies as the field is in its infancy and there is a general lack of funding for this frontier medicine area.

There are many more clinical trials on BEM devices than on biofield therapies, because BEM devices are patentable, profitable, and economically based in private enterprise. A moderate number of trials and case studies using BEM have been published on a variety of conditions and diseases, many by researchers outside the U.S. in languages other than English, and not all of them are well controlled. Many of the trials are performed outside the U.S., due to the higher expenses of clinical trials incurred here, and the stiff FDA regulations on medical devices.

Of the few well-designed trials on biofield therapies, most have tested the effectiveness of BT to reduce anxiety and pain. Clinical studies on biofield therapies have been criticized for lack of appropriate controls, and although this is valid in many cases, the research base in this area exceeds that of many other nursing and medical practices used in conventional medical care. More well-designed clinical research on greater numbers of subjects is needed to support the clinical use and scientific understanding of both BEM and BT.

DESCRIPTION OF LANDMARK STUDIES

1. Jorgensen WA, Frome BM, Wallach C. **Electrochemical therapy of pelvic pain: effects of pulsed EMFs (PEMF) on tissue trauma.** *Eur J Surg Suppl* 1994; 574: 83-86.

Case-studies report. Effective, long-lasting relief of pelvic pain of gynecological origin was obtained consistently by short exposures of affected areas to the application of a magnetic induction device producing short, sharp pulses over a 25 square centimeter area. Treatments are short, fast-acting, economical, and, in many cases, have obviated surgery. Of 17 female patients with dysmenorrhoea, endometriosis, ruptured ovarian cyst, acute lower urinary tract infection, post-operative haematoma, and persistent dyspareunia, magnetic field stimulation was used, unsupplemented by analgesics in most cases. Of 20 episodes of chronic pain, of which 11 were acute, 7 were chronic, 2 acute as well as chronic, 16 patients (90%) experienced marked, even dramatic relief, while 2 patients reported less than complete pain relief.

2. Gordon A. **The effects of therapeutic touch on patients with osteoarthritis of the knee.** *J Fam Pract* 1998; 47(4): 271.

This 6-week controlled clinical trial comparing a combination of standard care and therapeutic touch (TT) for treatment of the pain of osteoarthritis to standard care and mock TT, and standard care alone. The TT group improved significantly more than mock TT and the standard care

alone groups on scores for pain severity, outdoor work, activity level, affective distress, and life control ($p < 0.04$ to 0.0002).

3. Quinn JF. **Therapeutic touch as energy exchange: testing the theory.** *Adv Nurs Sci* 1984; 6(2): 42.

In a controlled clinical trial on the anxiety levels of hospitalized cardiovascular patients, therapeutic touch (TT) was compared with placebo TT, in which the hand-actions of TT were mimicked without the centering, conscious intention, or focus on the patient. After-test anxiety scores of patients were significantly reduced in those treated by TT but not placebo TT ($p < 0.0005$).

4. Salzberg CA, Cooper-Vastola SA, Perez F, Viehveck MG, Byrne DW. **The effects of non-thermal pulsed electromagnetic energy on wound healing of pressure ulcers in spinal cord-injured patients: a randomized double-blind study.** *Ostomy Wound Manage* 1995; 41(3): 42.

In a randomized, double-blind study, nonthermal pulsed EM fields significantly increased the healing rate of pressure ulcers in patients with spinal cord injuries. This is a well-designed trial that shows the wound-healing capacity of BEM.

5. Sandyk R. **Electromagnetic fields improve visuospatial performance and reverse agraphia in a Parkinsonian patient.** *Int J Neurosci* 1995; 87(3-4): 199.

6. Sandyk R. **Resolution of sleep paralysis by weak electromagnetic fields in a patient with MS.** *Int J Neurosci* 1997; 90(3-4): 145.

Pulsed AC electromagnetic fields were utilized in the treatment of multiple sclerosis (MS) and the management of Parkinson's disease. The patient with MS demonstrated improvement in mobility, vision, bladder function, mood, heat intolerance, sleep, and clarity of thinking. The patient with Parkinson's disease showed improved mobility and significantly reduced symptoms of freezing, falling, and tremors.

7. Pascual-Leone A, Rubio B, Pallardo, Catalá D. **Rapid-rate transcranial magnetic stimulation of the left dorsolateral prefrontal cortex in drug-resistant depression.** *Lancet* 1996; 348: 233-237.

Repetitive transcranial magnetic stimulation (TMS) may be very useful in addition to and instead of electroconvulsive therapy in treatment of drug-resistant depression. In a well-designed, randomized, placebo-controlled, double-blind study, TMS was administered to 17 patients with medication-resistant depression. The results show that 11 of the 17 patients (65%) showed improved mood.

8. Trock DH. **The effect of pulsed electromagnetic fields in the treatment of osteoarthritis of the knee and cervical spine. Report of randomized, double-blind, placebo-controlled trials.** *J Rheumatol* 1994; 21(10): 1903-1922.

Results of this well-controlled clinical trial indicated that exposure to PEMF had beneficial effects in treatment of patients suffering from osteoarthritis of the knee or cervical spine. Therapy consisted of 18 exposures lasting 30 minutes each and administered 3 to 5 times per week.

9. Vallbona C, Hazlewood CF, Jurida G. **Response of pain to static magnetic fields in postpolio patients: a double-blind pilot study.** *Arch Phys Med Rehabil* 1997; 78(11): 1200-1203.

50 patients with postpolio syndrome were studied. Half of them taped magnets (300 to 500 gauss) to painful areas of their bodies for 45 minutes, while the other half used placebo-magnets (sham devices). 76% of those treated with magnets reported significant pain reduction, compared with 19% of the placebo-controlled group.

10. Wirth DP. **The effect of non-contact therapeutic touch on the healing rate of full thickness dermal wounds.** *Subtle Energies* 1992; 1(1): 1.

A well-designed double-blind study involving 44 subjects that underwent punch biopsies on the skin, and received either 5 minutes of Therapeutic Touch (TT) or no treatment. Using a direct tracing method and a digitization system, wound surface areas were measured on day 0, 8, and 16. Results showed that treated subjects at days 8 and 16 showed a significant acceleration in the rate of wound healing compared with controls ($p < 0.001$). Of the 23 patients who received TT treatment, 13 healed completely by day 16, whereas none of the 21 patients who received no treatment were fully healed.

11. Rosa L, Rosa E, Sarner L, Barrett S. **A close look at therapeutic touch.** *JAMA* 1998; 279(13): 1005-1010.

This study concluded that the claims of therapeutic touch (TT) are unfounded based on the practice results of an untrained, adolescent investigator under conditions outside normal practice parameters. It was extrapolated from the study that TT use is not justified in a professional setting. The stated intent of the experiment was to investigate claims that healers can sense the Human Energy Field (HEF). Twenty-one TT practitioners of varying years of experience were tested. The author hovered her hand as the patient over one or the other of the practitioner's hands. The subject was asked to identify which hand was being covered, presumably by sensing the author's HEF. The practitioners identified the correct hand only 44 percent of the time. In a strongly written conclusion, the authors stated that, based on statistical and logical grounds, the TT practitioners had no ability to detect the HEF, if it exists. Several methodology issues were questioned in this study: 1) consistency of the distance between the experimenter's and subjects' hands, 2) lack of reference or use of methodology used by TT experts in 28 prior quantitative studies, 3) lack of accounting for conditions during which HEF cannot be detected by those denying desire for interaction with proper intention. Researchers have concluded in other studies that college students can sense another's intention to interact with them (Schwartz 1995, 1998).

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<http://www.issseem.org/>

Newsletter of the Bioelectromagnetics Society

<http://www.bioelectromagnetics.org/index.php>

SUMMARY OF RELATED COURSES AT HEALTH PROFESSIONAL PROGRAMS

University of California – Los Angeles School of Medicine

Healing Touch

Susan Stangl, MD, MS.Ed

Los Angeles, CA

Case Western Reserve University School of Medicine

Energy-Based Healing – DGMS 2021 – M1, M2 Elective

[Six-week clinical elective mini-course. “This course is designed to teach students how and why energy-based healing works. Each session will give a theoretical overview as well as offer an opportunity to experience energy-based healing techniques in live demonstrations. Students benefit most if they come open-minded and will to explore energy-based methods for healing of self and other. We will explore the anatomy of the human energy field, the basic science of energy healing, reiki and healing touch.”]

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University of Illinois at Chicago

Healing Touch - not currently being taught at the medical school due to curriculum change
[Course continues to be taught as workshop to registered nurses, physicians, body therapists, counselors, psychotherapists, other health professionals and individuals desiring an in-depth understanding and practice of healing work using energy-based concepts. Lecture, demonstration and practice focus on energetic approaches to health. Application of these complementary techniques range from self-care to professional use in a wide variety of programs such as stress reduction, rehabilitation, medical and hospice. Documentation of effects include reduction of anxiety/stress, pain relief, acceleration of wound-healing, and promotion of well-being.]

Dr. Mary Sinclair, LAc
College of Applied Health Sciences, School of Kinesiology
914 S. Wood Street
Chicago, IL 60612
312-996-2418

University of Minnesota School of Medicine, Center for Spirituality and Healing

Introduction to Energy Healing Elective– CSpH 5000

[2 credits, Fall 2002. “This course introduces students to healing techniques that use energetic systems in the body to enhance the body's ability to heal. Therapeutic Touch, Reiki, acupuncture, reflexology, magnets, homeopathy, and other modalities will be explored. Students will interact with practitioners of energetic techniques and have the opportunity to experience feeling "energy." Scientific theories explaining the mechanisms of energetic medicine and ways to measure energy will be investigated.”]

Cynthia J. Satterness, MS, Reiki Master

Contact: Nancy Feintheil
Center for Spirituality and Healing
Minneapolis, MN
612-624-5166,
feintheil@umn.edu

CME: Tellington Touch for Humans

[Four-day intensive experiential course introduces practitioners to Tellington Touch, “a gentle form of caring touch and an emerging natural healing method used for animals and humans. The course focuses on developing competent technique in Touch delivery through focused use of breath awareness, gentle physical touch, finger/hand pressure and an open-minded presence. Practitioners will learn how to help patients manage pain, anxiety, loneliness and common acute and chronic conditions that include migraines, Alzheimer’s, sports injuries, premature birth and learning disabilities. Completed and emerging research results and challenges in the research process are discussed along with current and potential issues related to human Touch.”]

Linda Tellington-Jones
Center for Spirituality and Healing
420 Delaware St SE
Mayo Memorial Bldg
5th floor, MMC #505
Minneapolis, MN 55455
612-624-9459
612-626-5280
<http://www.csh.umn.edu/Education/ltj/>
<http://www.tellingtontouch.com>

Mount Sinai School of Medicine of New York University

The Power of Subtle Body: Innovative Qi Gong

Joyce Shriver, PhD.
145 West 58th Street
New York, NY 10019
212-582-0720

Qi Gong in Medicine – MDE 051

Warner Chen, LAc, PhD
One Gustave Levy Place
New York, NY 10029
212-293-1722

Tufts University School of Medicine

Healing Connection Program at Union Hospital

Harvey Zarren, MD, FAAC
Union Hospital
Route 129
Lynn, MA
781-477-3604

Reiki Energy Medicine- no longer being taught.

[Pre-clinical “selective.”]

Libby Barnett LSW
Maggie Chambers
603-654-2787

Yale Graduate School of Nursing

Reiki Energy Medicine I and II

Pamela Potter
203-737-2230

AUDIO/VISUAL AND WEB-BASED MATERIALS

The Co-Creation Process in Energy Medicine: A Synergy of the Sciences and Healing Arts

[12th Annual ISSSEEM Conference Audio Tapes, 2002.]

<http://www.issseem.org/2002tapes.html>

Therapeutic Touch: A Video Course for Healthcare Professionals. (Quinn J.)

[National League for Nursing, 1996.]

WEBSITES

Bioelectromagnetics Society

<http://www.bioelectromagnetics.org/resources.php>

[BEMS publishes the journal, *Bioelectromagnetics*. Website includes list of related resources and links, including EMF research societies and institutions, publications, society-sponsors, corporate links, health issues organizations and opinion pages, therapeutic use of electromagnetic fields, and other useful starting points.]

Healing Touch International

<http://www.healingtouch.net/>

[Healing Touch International is the website of the Healing Touch educational program, developed by Janet Mentgen, RN, BSN, and has several training courses and professional networks around the country. This site also features a research section.]

Nurse Healer Practitioners Associates International (NH-PAI)

<http://www.therapeutic-touch.org/>

[This is the official site of the Nurse Healers-Professional Associates, Inc., located in Salt Lake City, Utah. NH-PAI is the approved provider of continuing education offerings for therapeutic touch. They maintain a Statement of Ethics and Conduct for Practice of therapeutic touch. NH-PAI was established in 1977 under the leadership of Dolores Krieger, PhD, RN, one of the founders of TT.]

International Society for the Study of Subtle Energies and Energy Medicine

<http://www.issseem.org/>

[ISSSEEM publishes the journal, *Subtle Energies and Energy Medicine*. Website provides links to journal, conference information, audio tapes, resource links, and a recommended reading list.]

Qigong Institute

<http://www.qigonginstitute.org/>

[Nonprofit corporation dedicated to research and education on Qigong.]

Touch Research Institute

<http://www.miami.edu/touch-research/>

[The Touch Research Institute is considered one of the premier centers for the scientific expertise of Massage, Healing Touch and Therapeutic Touch. The first Touch Research Institute was formally established in 1992 by Director Tiffany Field, Ph.D. at the University of Miami School of Medicine with a start-up grant from Johnson & Johnson. TRI was the first center in the world devoted solely to the study of touch and its application in science and medicine.]

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Beverly Rubik, PhD

Director, Institute for Frontier Science; Assistant Professor of Medicine, University of Arizona Fellowship Program in Integrative Medicine

Synonyms for bioenergetic medicine in Free Thesaurus. Antonyms for bioenergetic medicine. 26 synonyms for medicine: remedy, drug, cure, prescription, medication, nostrum, physic, medicament, cure, elixir, medicament, medication, nostrum, physic. What are synonyms for bioenergetic medicine? The Institute of Bioenergetic Medicine (IBEM) is located Centennial, Colorado outside of Denver. IBEM is the first Doctoral program of Bio-Energetic Medicine (BD) in North America. IBEM provides courses, certificates, and degrees in Traditional Naturopathy, Natural Medicine, Auriculomedicine, Biofeedback, and Bioenergetic Medicine. All coursework focuses on natural disciplines and modalities directed toward and focused on re-establishing the body's natural balance. IBEM offers the following doctorate degrees and certificates to our students. IBEM has uniquely designed its classes so that Photosynthesis, another major bioenergetic process, is the metabolic pathway used by plants in which solar energy is used to synthesize glucose from carbon dioxide and water. This reaction takes place in the chloroplast. After glucose is synthesized, the plant cell can undergo photophosphorylation to produce ATP.[28].