

Reference List

1. Ai AL and Sancier KM. A Critique of Studies on Qigong & Mental Health: Implications for Clinical Research [6/30/05]; Iselin, New Jersey, USA. 2001: 38. Abstract: This threefold presentation addresses the link between Qigong and mental health based on both the philosophy of Qigong and empirical research evidence. First, the relation of Qigong to mental health was embraced in the dialectical philosophy underlying the traditional Chinese medicine. This Daoist worldview expresses the ideas of health and life in a holistic and dynamic perspective, described in a set of energy- and/or function-oriented system theories with a nature of mind-body interaction. Its spirit was rooted in the ancient Yi-Jing/I-Ching (The Book of Changes), which represents the origin of an intellectual tradition ontologically different from its Western counterpart. In ancient Greece, Aristotelian philosophy described the world in a systematic structure, complemented by Democritus' pioneering thoughts on atoms, seen as the basic material substance. In contrast, Yi-Jing viewed the dynamic aspect of nature as full of changing patterns, driven by polar movements, regardless of their constant, substantive aspects. Following these changing principles, the Five-Element and Yin-Yang theories serve as a parsimonious coding system for registering the complex movement of energy and as the foundation of Qigong diagnosis and intervention. Second, this holistic view of health implies that clinical evaluation of Qigong should not completely follow that for the disease-specific model in allopathic medicine but encompass the evaluation of mental health/functioning in trials on given diseases. Studies on Qigong and mental health or psychological traits outside and within the U.S. are described and critiqued concerning their research designs and methodological limitations. Finally, because the goal of clinical evaluation is to assess efficacy, risk, and cost-effectiveness of any treatment, the potential side effect on mental health (e.g., "Qigong Deviation," as termed in China, or "Qigong Psychotic Reaction," as termed in the U.S.) of inappropriate practice is discussed, along with the scientific investigation of this undesirable reaction at the Department of Psychiatry, Shanghai Medical University. According to other studies, this potential adverse effect could be a phenomenon across various energy practices with different manifestations, and thus deserves attention in terms of ethics in research design and informed consent. In closing, clinical evaluation of Qigong, a treatment modality that is not solely materialistically-based, challenges both the philosophy of allopathic medicine and research methodology. Based on this discussion and the ethic principle of conducting clinical evaluation, suggestions are provided concerning assessment, protocol design, risk prevention and treatment, and consent form to improve the quality of research design on energy healing.
2. Sancier KM (Qigong Institute, Menlo Park, California, USA). Anti-Aging Benefits of Qigong [6/30/05]. J Intl Soc Life Info Science. 1996; 14(1):12-21; ISSN: 1341-9226. Abstract: Clinical studies are reviewed to illustrate that qigong can improve the health of people suffering from different chronic medical problems that accelerate the aging process. The focus is on personal practice of qigong exercise to improve many functions of the body, improve health and reverse aging. Clinical studies suggest that a combination therapy of qigong and drugs is superior to drug therapy alone, as indicated in the case of two diseases, hypertension and cancer. Qigong therapy can complement Western medicine in many ways to improve healthcare.
3. Sancier KM (Qigong Institute, East West Academy of Healing Arts, Menlo Park, USA). Anti-Aging Benefits of Qigong [6/30/05]; Beijing, China. 1996: 147. Abstract: The present article focuses mainly on internal qi because almost everyone can learn qigong exercises for maintaining health and for self-healing. Clinical studies indicating the anti-aging benefits of qigong 1. Therapeutic balancing of the meridians and functions of the body by qigong The profound effect that internal qigong practice may have on balancing the energies of the organs and functions of the body is illustrated by measurements using Electroacupuncture According to Voll. Four subjects were examined by EAV before and after they practiced qigong. Qigong exercise decreased the average of the EAV measured values of the four subjects in the range of -19 to -31% ($p < 0.004$). Qigong eliminated almost all the indicator drops. In the second series, each of seven subjects was examined by EAV three times in a blind protocol, so that the operator did not know whether a subject had practiced qigong before the second or third examination. The results showed that qigong exercise changed the average EAV

measured values in the range of -17 to -35% for four subjects and in the range of 4 to 15% for three subjects. Indicator drops again were markedly decreased.

2. Clinical studies of effects of qigong on hypertensive patients The research of the Shanghai Institute of Hypertension was selected for discussion. the patients practiced "Yan Jing Yi Shen Gong" for 30 minutes twice a day. This qigong is claimed to be especially valuable for therapeutic purposes and delaying senility.

a. Blood Pressure Over the period of 20 years, the blood pressure of the qigong group stabilized while that of the control group increased. Remarkably, during this period the drug dosage for the qigong group could be decreased, while the dosage for the control group had to be increased.

b. Mortality and Stroke Qigong exercise decreased by about 50 percent the incidence of total mortality, mortality due to stroke, and morbidity due to stroke. At the end of 30 years, 86 patients survived in the qigong group and 68 in the control group.

c. Improvements in heart function and microcirculation The researchers evaluated the effects of qigong for 120 aged patients by using ultrasonic cardiography (UCG) and indices of microcirculation. After practicing qigong for one year, cardiac output was increased, the total peripheral resistance decreased, and the ejection fraction mitral valve diastolic closing velocity and the mean velocity of circumferential fiber shortening tended to be increased.

The incidence of disturbance in microcirculation disturbance was 73.9% in the deficiency of heart-energy hypertensive patients. After a year of qigong practice, the incident of disturbance was 39.1% ($p < 0.01$).

d. Improvement in sex hormone levels Seventy male patients with essential hypertension (ages 40 to 69; disease stage II) were divided into two groups. For the qigong group ($n=42$), which practiced qigong for one year, the estradiol level (E2) decreased from 70.1 to 47.7 pg/ml, a decrease of 32% ($p < 0.01$), while no significant changes occurred in the control group ($n=20$). For women qigong practiced one year resulted in an increase of E2 from 40.9 ± 3.5 to 51.6 ± 3.5 pg/ml. The value of T was also increased by qigong from 25.5 ± 2.2 to 37.2 ± 2.2 ng/dl.

e. Changes in blood chemistry in hypertensive patients Qigong exercise may have on blood chemistry of hypertensive subjects. Improvements were noted in plasma coagulation fibrinolysis indices, blood viscosity, erythrocyte deformation index, levels of plasma tissue-type plasminogen activator (tPA), plasminogen activator inhibitor (PAI), VIII factor related antigen (VIII R:AG), and anti-thrombin (AT-III). Enhanced activity of anti-aging enzyme SOD The result showed that the mean level of SOD was increased by qigong exercise. For example, the SOD level was larger in the qigong group (about 2700 u/gHb) and than in the control group (1700 u/g Hb).

Cardiovascular function Qigong exercise can protect healthy pilots from altitude stress when they flew rapidly from a low altitude to the high altitude of the Tibetan highlands.

Blood flow to the brain Qigong exercise has been shown by rheoencephalography to increase blood flow to the brain. For 158 subjects with cerebral arteriosclerosis who practiced qigong for 1 to 6 months, improvements were noted in symptoms such as memory, dizziness, insomnia, tinnitus, numbness of limbs, and vertigo headache. Combination therapy of qigong & drugs is superior to drug therapy alone. Qigong also could promote drug uptake to tissue and cells via increased blood circulation.

4. Sancier KM (Qigong Institute, Menlo Park, California, USA). Anti-Aging Benefits of Qigong [6/30/05]; San Francisco. 1998: 47. Abstract: Several clinical studies performed in China are reviewed to illustrate that qigong can improve the health of people suffering from different chronic medical problems that accelerate the aging process. In these studies, the individual practice of qigong exercises led to improvements of many functions of the body and reversed some of the effects of aging. Clinical studies also suggest that a combination therapy of qigong and drugs is superior to drug therapy alone, as indicated by studies of three diseases: hypertension, asthma and cancer. The greater efficacy of the combined therapy provides evidence that qigong and Western medicine can be complementary. The combination offers alternative ways to improve healthcare and reduce or reverse some of the effects of aging.
5. --- (Qigong Institute, East West Academy of Healing Arts, 450 Sutter St. #2104, San Francisco, CA 94108, USA [1]). Effect of qigong on therapeutic balancing measured by electroacupuncture according to Voll (EAV) [6/30/05]; Beijing, China. 1993: 90. Abstract: Electroacupuncture According to Voll (EAV) was used to monitor the effects of qigong on therapeutic balancing of subjects. In EAV the

electrical conductance of the skin above an individual acupuncture point is measured using a blunt metal probe and a low current. Diagnosis depends on measuring the maximum electrical conductance and its time dependence. The conductance is measured by a meter that is calibrated from 0 to 100. A reading of 50 indicates that the organ associated with the acupuncture point is free of pathological problems. Higher readings (higher conductance) are associated with inflammation and lower readings (lower conductance) with degeneration of an organ. In EAV, "indicator drop" is an important diagnostic criterion of a functionally disturbed organ. Indicator drops occur when the conductance of a given acupuncture point decreases from an apparent maximum value and then levels off. EAV measurements were made before and after eleven subjects practiced qigong. Measurements requiring about 5 minutes were made of the conductance properties at 24 acupuncture points at the ends of the meridians of the fingers and toes of a subject. The instrumental test parameters were: 1.25 volts d. c. output voltage, 12.7 microamperes current output at full scale, and 95,000 ohms resistance at midscale (50). Tap water was applied to the skin surface in the region of the acupuncture point before pressing a brass probe (1/8" in diameter) gently onto the acupuncture point. The subject held the other electrode in one hand. The computer was programmed to provide information on twenty organs and physiological functions of the body for the right and left side of the body. Two series of EAV measurements were made by the same operator and equipment. In both series, the subjects were asked to perform a qigong exercise of their choosing, usually meditation or moving qigong. In the first series, four subjects were examined by EAV before and after qigong exercise. Three of the subjects were experienced qigong practitioners. The fourth subject was balanced by one of the qigong practitioners. The results show that qigong practice decreased the average meter readings of the four subjects taken as a group from 70.8 ± 4.8 to 52.7 ± 2.4 . The average change was $-25.5 \pm 4.9\%$ with a statistical significance of $p = .004$. Indicator drops that were observed for all subjects prior to qigong decreased in value after qigong practice. For example, the sum of all indicator drops for each of three subjects decreased in value from 20, 22 and 53 to zero, respectively, and for the fourth subject it decreased from 129 to 28. The second series of measurements was made six months later with seven subjects. Each of the subjects was examined by EAV three times, but the subjects did not reveal until afterward whether they had practiced qigong before the second or third examination. This "blind" protocol insured that the operator did not know when a subject had practiced qigong. For four subjects the average EAV readings were decreased by qigong practice from 72.3 ± 7.6 to 53.0 ± 9.8 ($-27.3 \pm 7.6\%$) and increased for three subjects from 66.5 ± 12.7 to 73.1 ± 10.4 ($+10.3 \pm 5.7\%$). When indicator drops were present in a subject's EAV before qigong, they decreased or became zero after qigong practice. The results of this preliminary study indicate that EAV is responsive to changes associated with qigong practice. Therefore EAV may provide basic information on how qigong balances body energy and affects specific meridians or organs.

6. --- (Qigong Institute, East West Academy of Healing Arts, Menlo Park, CA). Effect of qigong on therapeutic balancing measured by electroacupuncture according to Voll (EAV): a preliminary study [6/30/05]; Vancouver, British Columbia, Canada. 1995: 32. Abstract: Electroacupuncture According to Voll (EAV) was used to monitor the effects of qigong practice on therapeutic balancing of subjects. In EAV the electrical conductance of the skin above individual acupuncture points is measured using low voltage and current. Diagnosis depends on measuring the relative electrical conductance and its time dependence. An important diagnostic criterion of degeneration of an organ is an indicator drop which occurs during the measurement when the conductance decreases from an apparent maximum value and then levels off. Two series of EAV measurements were made before and after healthy subjects practiced qigong. Measurements were made at 24 acupuncture points at the ends of the meridians of the fingers and toes of a subject and were made by the same operator and equipment. The subjects were asked to perform a qigong exercise of their choosing. In the first series, four subjects were examined by EAV before and after qigong exercise. Qigong exercise decreased the average EAV measured values of the four subjects in the range of -19 to -31%. Qigong eliminated indicator drops for three subjects and reduced the indicator drop by 80% for the fourth subject. In the second series, each of seven subjects was examined by EAV three times in a blind protocol so that the operator did not know whether a subject had practiced qigong before the second or third examination. Qigong exercise changed the average EAV measured values in the range of -17 to -

35% for four subjects and 4 to 15% for three subjects. Indicator drops appeared for three subjects, and they were eliminated for two subjects and reduced by 30% for the third subject. These preliminary studies indicate that EAV can monitor the effects of qigong on changes in the therapeutic balancing of the meridian-organ system. Suggestions are made of how EAV can provide basic information about qigong and its applications.

7. --- (Qigong Institute, Menlo Park, CA 94025). The effect of qigong on therapeutic balancing measured by electroacupuncture according to Voll (EAV): A preliminary study. [6/30/05]. *Acupunct Electrother Res*. 1994; 19(2/3):119-127; ISSN: 0360-1293. Abstract: Electroacupuncture According to Voll (EAV) was used to monitor the effects of qigong practice on therapeutic balancing of subjects. In EAV the electrical conductance of the skin above individual acupuncture points is measured using low voltage and current. Diagnosis depends on measuring the relative electrical conductance and its time dependence. An important diagnostic criterion of degeneration of an organ is an indicator drop which occurs during the measurement when the conductance decreases from an apparent maximum value and then levels off. Two series of EAV measurements were made before and after healthy subjects practiced qigong. Measurements were made at 24 acupuncture points at the ends of the meridians of the fingers and toes of a subject and were made by the same operator and equipment. The subjects were asked to perform a qigong exercise of their choosing. In the first series, four subjects were examined by EAV before and after qigong exercise. Qigong exercise decreased the average EAV measured values of the four subjects in the range of -19 to -31%. Qigong eliminated indicator drops for three subjects and reduced the indicator drop by 80% for the fourth subject. In the second series, each of seven subjects was examined by EAV three times in a blind protocol so that the operator did not know whether a subject had practiced qigong before the second or third examination. Qigong exercise changed the average EAV measured values in the range of -17 to -35% for four subjects and 4 to 15% for three subjects. Indicator drops appeared for three subjects, and they were eliminated for two subjects and reduced by 50% for the third subject. These preliminary studies indicate that EAV can monitor the effects of qigong on changes in the therapeutic balancing of the meridian-organ system. Suggestions are made of how EAV can provide basic information about qigong and its applications.
8. --- (Qigong Institute, 561 Berkeley Avenue, Menlo Park, CA 94025, USA). Effects of subject's thought and a qigong master's intention on body energy monitored by a quantitative muscle test [6/30/05]. *J Intl Soc Life Info Science*. 2004; 22(1):200-204. Abstract: A quantitative arm-muscle test that measured the time dependence of the downward force on a subject's arms and the distance the arms were moved downward was developed to monitor changes in body energy. The changes are ascribed to mind-body interactions. In Part 1, eleven subjects were tested 9 to 10 times after viewing a card marked "sick" or "well." Generally, arm strength was less after viewing a "sick" than a "well" card. The means of the distances that the arms were lowered between viewing the "sick" and "well" cards gave statistical significance of $p \leq 0.038$ for six subjects and $p < 0.0000003$ for the group. In Part 2, ten subjects were each tested after a Qigong master affected their body energy by using a set of non-verbal qigong maneuvers to either weaken or strengthen a subject's body energy. For the group, the means of the distances that the arms were lowered after weakening and strengthening maneuvers were statistically different with a p-value = 0.00048. The statistical analysis was performed using the Student T-test and by omitting the initial muscle strength readings.
9. --- (Qigong Institute, Menlo Park, California, USA). Electrodermal measurements during a qigong workshop [6/30/05]; San Francisco, Calif., USA. 2000. Abstract: Electrodermal techniques measure the electrical conductivity of acupuncture points on the skin to provide information about the condition of the meridians and corresponding body organs. To monitor the effects of a qigong workshop on 29 students, a Ryodoraku instrument was used to measure the conductivity of 24 acupuncture points, 6 points on each wrist and 6 on each foot. These points are located on the 12 meridians. During the workshop, Dr. Bingkun Hu taught the microcosmic and macrocosmic orbit qigongs. Each student was tested four times during the weekend. The subjects served as their own control. The Ryodoraku instrument applies 12 volts D.C. to a wet cotton electrode in contact with the skin, and the current flowing at 0.75 seconds is recorded and later plotted on a special nomograph. The

responses are converted to a distance (cm) with respect to an average value of all 24 measurements. Responses above a band 1.4-cm wide centered at the average response indicates that the corresponding organ has excess qi and if below the band it is qi deficient. The Ryodoraku responses of the 29 subjects were higher in the afternoons of both days than in the mornings (p-value <0.00001). This effect may be due to qigong practice, a diurnal effect, or an increase in the sympathetic nervous system activity. To evaluate changes in energy balance among the meridians of the body, the standard deviations of the Ryodoraku responses were calculate for each subject and for each of the four measurement times. Ideally, the standard deviation would be zero when the functions of all organs of the body are balanced. The results show that the standard deviations decreased for 26 subjects over the weekend workshop (p<0.00001), 22 over Sunday (p<0.004), and 11 over Saturday (p=0.13). These results suggest that the qigong workshop had balanced the energy of most of the students and the effect was greater on the second day of the workshop. Partial funding by NIH grant U24HD32994 to Kessler Institute for Rehabilitation (Samuel C. Shiflett, Principal Investigator).

10. --- (Qigong Institute, Menlo Park, CA and American College of Traditional Chinese Medicine, San Francisco, CA.). Electrodermal measurements for monitoring the effects of a qigong workshop [6/30/05]. *J Altern Complement Med.* 2003; 9(2):235-41. Abstract: . OBJECTIVES: Electrodermal measurements with a Ryodoraku instrument were used to monitor the effects of a 2-day qigong workshop on the body energy of participants. METHODS: Measurements were made of the relative electrical conductivity of 24 acupuncture points on the wrists and feet of 29 subjects. Each subject was measured in the morning and afternoon of each day, and the subjects served as their own control. RESULTS: The standard deviation of the mean values of the Ryodoraku responses of individuals and of the group were less in the afternoons than in the mornings with p-values of 0.004 and 0.0001 for the first and second days, respectively. The decreases in the values of the standard deviations indicate that the balance of the body energy of individuals and the group had improved, presumably as a result of the workshop. We also found that all Ryodoraku responses were significantly greater in the afternoons than in the mornings, a result that is attributed to a circadian rhythm. CONCLUSIONS: The improved balance of qi energy in the body of the participants indicates that qigong practice has the potential to improve health. Electrodermal measurements for monitoring Eastern and Western therapies are discussed.
11. --- (Qigong Institute, Menlo Park, CA 94025). Electrodermal measurements for monitoring the effects of qigong and tcm therapy [6/30/05]; 2001. Abstract: Some recent research using electrodermal measurements for monitoring the effects of qigong practice and TCM therapy will be discussed. The electrodermal measurements provide information about energy imbalances among the meridians and corresponding functions of the body and how these imbalances are normalized by qigong and traditional Chinese medicine (TCM) theeerapy. The electrodermal techniques and results of research will be discussed and include Electroacupuncture According to Voll, the Ryoddoraku (Japanese) and the Human Meridian Tester (Chinese). The electrodermal results show that (1) qigong can improve the energy balance in the body and (2) diagnosis of embalances and TCM therapy agree with TCM diagnosis and patient complaints.
12. --- (Qigong Institute, East West Academy of Healing Arts, San Francisco, Calif., USA [1]). Healing with qigong: case studies and experimental measurements by muscle testing [6/30/05]; UC Berkeley, Calif, USA. 1990: 110. Abstract: The principles of energy healing according to The Chow Integrated Healing System will be discussed and demonstrated to show the tonification or sedation effects of certain Qigong maneuvers. An experimental study will be described of the effects of certain Qigong maneuvers related to healing on the body energy of eight subjects. Changes in body energy were inferred from an arm muscle test that was made after each of a given sequence of six Qigong maneuvers given to each of the subjects. Measurements were made of the time dependence of the force required to lower the subject's arms and of the arm height. Two different nonverbal Qigong maneuvers were used: (1) a process initiated by Qigong master, Dr. Effie Chow, whose intention was to weaken (disperse) or strengthen (tonify) the body energy of the subject and (2) a

thought process of the subject stimulated by flash cards visible only to the subject that were marked either "weak" or "strong." Related Qigong maneuvers are used in healing to balance the body energy. The time duration of the resistance to the downward force was used as a parameter to characterize the body energy. The results show that the subjects' resistance to the downward force was decreased by an energy dispersing maneuver and restored by an energy tonifying maneuver. For example, statistical analysis of a group of 8 subjects who experienced the first type of nonverbal Qigong maneuver showed that the means of the time-duration for the dispersed and tonified states were significantly different ($P < 0.0001$). Statistical analysis of a group of 15 subjects who experienced the second type of Qigong maneuver showed that the means were significantly different for 10 subjects ($0.0001 < P < 0.031$), marginally significant for 2 subjects ($P = 0.049$), and not significant for 3 subjects ($P > 0.14$). The results of the study support the widely held belief that healing is enhanced by a positive mental attitude of the individual, and our results show that a healer can have a profound effect. In fact our studies indicate that the effectiveness of the healer seemed to be more reproducible among the subjects than the nonverbal thought of the subjects. However, subjects who responded with highest correlation were among those who, in response to the flash cards, used strong visualization of what it meant to be weak or strong. These findings have consequence in diverse fields, such as, Chinese medicine, health care, bioenergetics, psychoneuroimmunology, and chiropractic.

13. ---. Measuring the Effects of Self-Applied Qigong and Emitted Qi on the Body [6/30/05]; Iselin, New Jersey, USA. 2001: 27. Abstract: Introduction: This presentation will outline research studies that measured the effects of qigong and emitted qi on the body. Clinical studies in China have shown that qigong can improve chronic conditions such as hypertension, asthma, cardiovascular disease and cancer. Experimental studies of the effects of emitted Qi on animals, plants and cell cultures rule out psychological mechanisms. Several measurement techniques have demonstrated that emitted Qi can affect the body. An infrared camera showed that emitted Qi raised the skin temperature of the patient, suggesting that blood circulation was increased. Electroencephalography, electrocardiography and ultrasound techniques showed that emitted Qi and self-applied qigong had profound physiological effects on the body. Self-practice of qigong improved blood pressure, immune response, cholesterol and estradiol levels, and bone density, and decreased drug dosages required for maintaining patients with hypertension and asthma. Another measure is cost effectiveness that was reported for asthma patients who practiced qigong, such as savings in drug costs, emergency care and lost work time. I have used arm-muscle testing, a form of applied kinesiology, to demonstrate that emitted Qi and internal qigong can affect arm-muscle strength. For this experiment, I designed an instrument to measure the force applied and the vertical displacement of the arm. In the case of emitted Qi the qigong master used intention to weaken or strengthen the arm strength of eight subjects ($p < 0.0001$). In the case of internal qigong, a blind study showed that when 12 out of 15 subjects viewed a card marked "sick" their arm strength weakened, while viewing a "well" card resulted in strengthening of the arm muscles ($p < 0.01$ to 0.0001). Electrodermal measurement of the effects of qigong on the body. I will discuss my recent research that employed electrodermal measurements (EDM), such as by Electroacupuncture According to Voll and the Ryodoraku. EDM techniques depend on the observation that acupuncture points, which are located along the energy meridians of the body, have higher electrical conductance than that the surrounding skin. Such measurements have diagnostic value by providing means to determine which organ functions are unbalanced. When the electrical conductance is outside of a physiologically acceptable range, the energy of the corresponding organ function is said to be unbalanced. Two EDM studies showed that self-practice of qigong balanced the energy functions of the body. In one study, 7 out of 11 practitioners who practiced 10 to 15 minutes qigong balanced the Qi of all their organ functions. In another study, EDM was also used to measure energy changes that occurred in students over a 2-day qigong workshop during which each student was measured in the mornings and afternoons of each day. At the end of the weekend, the organ functions of 27 out of 29 students became better balanced ($p < 0.0001$). The criterion of balance was that the standard deviation from the mean of all readings decreased, where the standard deviation of the mean would ideally approach zero when the organ functions were perfectly balanced. Conclusion: Clinical and experimental measuring techniques have shown that emitted Qi and self-applied qigong can affect

the body. These techniques may be applied to evaluate the efficacy of different qigong forms, given qigong therapies, as well as the effectiveness of qigong masters.

14. Sancier KM (Qigong Institute, East West Academy of Healing Arts). Medical applications of qigong [6/30/05]. *Altern Ther Health Med*. 1996; 1(4): ISSN: 1078-6791. Abstract: This article reviews selected scientific studies of medical applications of Chinese qigong. The intention of the review is to outline research on qigong and its potential for improving health care in western countries. The review centers on clinical and experimental studies to show that qigong exercise can beneficially affect many functions of the body and improve health. The studies were selected to illustrate the following points: medical applications of qigong are diverse, some studies were conducted in depth, and many applications hold promise to improve western health care. Several specific clinical and experimental studies are outlined. The study using electroacupuncture according to Voll shows that almost all organs and functions of the body can be balanced by qigong. The research on hypertension serves as a model to illustrate the many ways that the effects of qigong on the body can be measured. Studies on brain waves are included to show that the mind is involved in qigong and probably in the healing process. Research on qigong's role in high altitude adaption suggests some practical applications for treating cardiovascular disease. A combination of qigong and drug therapies is superior to drug therapy alone, as indicated in the case of two diseases, hypertension and cancer. In conclusion, there is a plea to medical practitioners and scientists to collect existing information on medical qigong, promote research if needed, and identify applications that hold promise for improving western health care.
15. Sancier KM (Qigong Institute, Menlo Park, CA 94025). Monitoring the effects of a qigong workshop by electrodermal measurements [6/30/05]; 2001. Abstract: The effects of a 2-day qigong workshop on 29 students were monitored by measuring the electrical conductivity of the skin above 24 acupuncture points on the wrists and ankles. Each student was measured with the Ryodoraku instrument before and after class on both days. Micro and macro cosmic orbit qigong were the principal qigong forms taught. Statistical analysis of the data shows that the standard deviations from the mean of the readings for the group decreased ($p < 0.00001$). This result indicates that the workshop had improved the balance of energy among the meridians and corresponding organ functions of the students.
16. ---. Qigong and neurologic illness. Weintraub, Michael. *Complementary and alternative medicine for neurologic illness*. St. Louis, Missouri: Harcourt Health Sciences; 2000.
17. ---. Qigong database [6/30/05]. *Adv Mind Body Med*. 2000; 16(3):159.
18. --- (Qigong Institute, East West Academy of Healing Arts, 450 Sutter Street #2104, San Francisco, California 94108, USA). Qigong & drug therapy is superior to drug therapy alone [6/30/05]; Beijing, China. 1996: 171. Abstract: One of the more exciting prospects of advancing healthcare is the integration of Western and Chinese medicine. As cultures share information, medicine can evolve to provide more effective health care. This paper will review several critical studies that report that patients who combined qigong practice with drug therapy improved far more than patients who received drug therapy alone. Several clinical studies reported that a combination therapy of drugs with personal practice of qigong provided a better outcome than drug therapy alone. Several of these clinical studies will be reviewed. (1) In a 20-year study of hypertensive patients, Kuang, Wang, et al reported that patients who practiced qigong exhibited more stable and lower blood pressure than the control group. The dosage of hypotensive drugs could even be decreased in the qigong group, while it had to be increased in the control group. Xian also reported that hypertensive patients in a qigong group needed smaller doses of a hypotensive drug than the control group. (2) In the case of patients with advanced cancer, Sun & Zhao reported that a combination of drugs and qigong resulted in greater improvement of symptoms (e. g. strength, appetite, diarrhea free, weight gain) than the control group. (3) Omura reported that drug delivery is enhanced by qigong. For example, in the treatment

of infections, drug uptake was enhanced by applying "qigongized" paper, e. g. qi emitted to paper, to the afflicted area of the body. The explanation of the superiority of the combination therapy is based on the theory of traditional Chinese medicine (TCM). TCM, which includes qigong, is a holistic practice that promotes free flow of qi and blood throughout the body. Where tissues are under stress because of injury or disease, qigong can enhance qi and blood circulation to that area so that nutrients may more efficiently be delivered to the affected cells and also waste products in the stressed tissue can be removed more readily. This dynamic situation promotes self-regulation of the functions of the body, permitting self-healing. If drugs are needed to promote healing, qigong appears to enhance the delivery of the drug to cells of the body. This mechanism of enhanced drug delivery suggests that qigong could make possible smaller dosages of drugs, which would cause less adverse side-effects. For example, qigong is reported to restore estradiol levels in hypertensive, menopausal women, leading to the possibility that estrogen replacement therapy might not be necessary or might be used at reduced levels. The papers reviewed are a few of the numerous clinical studies in China that report the health and healing benefits of qigong. English abstracts of most of these studies are included in the computerized Qigong Database, which contains about 1000 citations. The author has used the Database as a reference source for several reviews showing that qigong improves many functions of the body.

19. --- (Qigong Institute, 561 Berkeley Avenue, Menlo Park, CA 94025, USA). Qigong enhances drug therapy [6/30/05]; Beijing, China. 1998: 121. Abstract: According to an article in the Journal of the American Medical Association, more than 100,000 people a year die in American hospitals from adverse reactions to medication, making drug reactions one of the leading causes of death in the United States. In the present paper, clinical studies are reviewed that report greater benefits from a combination therapy of Qigong practice and drugs compared to drug therapy alone, and that Qigong may reduce drug dosage. Most of the clinical studies were performed in China by Chinese scientists. The information for this review was developed mainly by using the Computerized Qigong Database and partly from personal contacts with researchers. At the outset, the point is made that self practice of Qigong can affect favorably many functions of the body. Three general medical conditions are reviewed: a. hypertension b. respiratory disease c. cancer In the clinical studies, drugs were administered to almost all patients who were usually divided into two groups. Group A composed of those who practiced Qigong exercises and Group B, a control group which did not practice Qigong. Multiple medical benefits accrue to patients who received the combination therapy of Qigong and drugs compared with drugs alone. Therefore, combining Qigong practice with drug therapy may have significant impact in relieving sickness, mortality and costs associated with adverse drug reactions. Dramatic cost savings are reported in an asthma study. To account for the superior benefits of the combination therapy compared to therapy by drugs alone, a mechanism is proposed in which Qigong promotes the uniform flow of Qi in the body which in turn improves blood circulation, delivery of oxygen and nutrients to cells of the body, and removal of waste products. In this way the functions of the body are strengthened so that the body can heal itself. The enhanced effect of Qigong on drug therapy then results from the increased blood circulation and the attendant greater efficiency of delivery and utilization of drugs in the blood to tissues of the body which are under stress from disease or injury.
20. --- (Qigong Institute, 561 Berkeley Avenue, Menlo Park, CA 94025). Qigong, the anti-aging therapy [6/30/05]. *Massage & Bodywork*. 1999; 128-130. Abstract: One of the more exciting prospects of advancing healthcare is the integration of Western and Chinese medicine. As cultures share information, medicine can evolve to provide more effective healthcare. This article reviews clinical studies which report that patients who practiced qigong could reverse symptoms of aging, had fewer strokes and lived longer. Moreover, studies show that patients who required drug therapy improved faster when they practised qigong.
21. ---. Search for medical applications of qigong with the qigong database [6/30/05]. *J. Alt. Compl. Med.* 2001; 7(1):93-95. Abstract: Qigong is the ancient art of health maintenance and healing that originated several thousand years ago in China. Qigong (pronounced chee gong) embodies two principles, *Qi*

the vital energy of the body and *gong* the practice and training of the Qi. A person practices Qigong by a combination of exercises including meditation, visualization, breathing and movement. A skilled practitioner of Qigong is able to project Qi to improve the health of another person. The ultimate goal of Qigong is to improve the functions of the body in a balanced way. Beginning about 1980, extensive clinical and experimental research on medical applications of Qigong was carried out by scientists in China. Most of these studies were reported only at international conferences, and only a few were published because suitable scientific journals are not available in China. The Qigong Database™ is a compilation of references to most of these studies as well as to reports in scientific journals, books and Medline. Most of the references contain abstracts in English that may be several pages in length with tables of data and statistical analysis. The Qigong Database provides the only record in English of the vast amount of research on Qigong from China as well from other countries. The Database contains reports of therapies that have been tried and claimed to be effective. These reports can be used as a guide for improving health and for deciding what further research may be required to confirm promising applications of Qigong. While few research studies on Qigong conform strictly to western scientific protocols, the collection of research is so large that it cannot be ignored. The entire collection of 1680 references in the Qigong Database™ (version 5.0) can be searched using any key word(s). The abstracts contain information on how Qigong has been applied to treat different medical conditions and on the philosophy and theory of Qigong. The importance of Qigong in treating some medical applications is illustrated by the frequency that some health-related terms appear in the Qigong Database, as shown in the table. Table 1. Frequency of appearance of health-related terms.

<u>Health-related terms</u>		<u>Frequency of appearance</u>	
55	Anesthesia	15	Anxiety
28	Arthritis	19	Asthma
25	Blood and circulation	105	Cancer
114	Cardiac	34	Dementia
4	Dizziness	15	Hypertension
97	Immune	95	Neuro (-pathy, -logic, -logical)
9	Pain	137	Paralysis
18	Parkinson	5	Psychoneuroimmunology
9	Psychosomatic	27	Stroke
20	Tinnitus	9	Vertigo
5	Note: A term may appear multiple times in one citation, for example, in the title as well as in the abstract.		

The Database displays information in two formats. Figure 1 illustrates the list format of all records, including author, paper title, date and citation, and all which items can be sorted independently. Figure 2 illustrates the record format showing the details of a given reference including the abstract. Medical Qigong is of increasing interest in the West as a complementary approach for treating medical conditions in a cost-effective way. Recently, the Qigong Database™ has been used as source material for eight books, seven dissertations and numerous research studies. Feedback from medical practitioners, scientists and the public has been overwhelmingly supportive. Version 5.0 of the Database has been updated and now is available on a compact disk that operates with Windows and Macintosh compatible computers. A read-only version of ProCite's bibliographic software (Version 4.0.3) is provided to enable searching and sorting of material based on any key words and production of bibliographies and printing. This version of ProCite includes the 'Cite as You Write' feature that works with Microsoft Word to enables the insertion of references while writing papers. The Qigong Database is supplied only by the Qigong Institute, which can also develop customized searches and bibliographies. Further information can be found at the web site <www.qigonginstitute.org> or by contacting the Qigong Institute by E-mail at qi@qigonginstitute.org or by mail at the Qigong Institute, 561 Berkeley Avenue, Menlo Park, CA 94025, USA. **Captions for Figures 1 & 2:**

Figure 1. Citations in list format from Qigong Database. Figure 2. A citation in record format from the Qigong Database.

22. --- (Qigong Institute, Menlo Park, CA 94025). Search for Medical Applications of Qigong with the Qigong Database™ [6/30/05]. Townsend Letter for Doctors & Patients. 2002; (222):116-118. Abstract: Qigong is the ancient art of health maintenance and healing that originated several thousand years ago in China. Qigong (pronounced chee gong) embodies two principles, Qi -- the vital energy of the body -- and gong the practice and training of the Qi. A person practices Qigong by a combination of exercises including meditation, visualization, breathing and movement. A skilled practitioner of

Qigong is able to project Qi to improve the health of another person. The ultimate goal of Qigong is to improve the functions of the body in a balanced way. Beginning about 1980, extensive clinical and experimental research on medical applications of Qigong was carried out by scientists in China. Most of these studies were reported only at international conferences, and only a few were published because suitable scientific journals are not available in China. The Qigong Database[TM] is a compilation of references to most of these studies as well as to reports in scientific journals, books and Medline. Most of the references contain abstracts in English that may be several pages in length with tables of data and statistical analysis. The Qigong Database provides the only record in English of the vast amount of research on Qigong from China as well as from other countries. The Database contains reports of therapies that have been tried and claimed to be effective. These reports can be used as a guide for improving health and for deciding what further research may be required to confirm promising applications of Qigong. While few research studies on Qigong conform to strict scientific protocol, the collection of research is too large and significant to be ignored. The entire collection of 1,660 references in the Qigong Database[TM] (version 5.0) can be searched using any key word(s). The abstracts contain information on how Qigong has been applied to treat different medical conditions and on the philosophy and theory of Qigong. The importance of Qigong in treating some medical applications is illustrated by the frequency that some health-related terms appear in the Qigong Database, as shown in the table. A term may appear multiple times in one citation, for example, in the title as well as in the abstract.

23. ---. Therapeutic Benefits of Qigong Exercises in Combination with Drugs [6/30/05]. *J Altern Complement Med.* 1999; 5(4):383-389; ISSN: 1341-9226. Abstract: This article reviews clinical studies from the Qigong Bibliographic Database, developed by the Qigong Institute, a nonprofit organization. This database was started in 1994 and holds approximately 1300 references going back to 1986, covering medical applications, scientific, and experimental studies on qigong from China, the United States, and Europe. Records in English have been compiled from International Qigong conferences and seminars, scientific journals, magazines, dissertations, MEDLINE, and other databases. The therapeutic role of qigong exercises combined with drugs is reported for three medical conditions that require drug therapy for health maintenance: hypertension, respiratory disease, and cancer. In these studies, drugs were administered to all patients who were divided into two groups, a group that practiced qigong exercises and a control group that did not. Taken together, these studies suggest that practicing qigong exercises may favorably affect many functions of the body, permit reduction of the dosage of drugs required for health maintenance, and provide greater health benefits than the use of drug therapy alone. For hypertensive patients, combining qigong practice with drug therapy for hypertensive patients resulted in reduced incidence of stroke and mortality and reduced dosage of drugs required for blood pressure maintenance. For asthma patients, the combination therapy permitted reduction in drug dosage, the need for sick leave, duration of hospitalization, and costs of therapy. For cancer patients, the combination therapy reduced the side effects of cancer therapy. Also reported is a study showing that the practice of qigong helps to rehabilitate drug addicts. The reported studies do not necessarily measure up to the strict protocols required for randomized controlled clinical trials.
24. Sancier KM and Chow EPY (Qigong Institute, East West Academy of Healing Arts, 450 Sutter St., Suite 2104, San Francisco, CA 94108, U.S.A. [1]). Effect of external and internal qi as measured experimentally by muscle testing [6/30/05]; Shanghai, China. 1990: 138.
25. --- (Qigong Institute, Menlo Park, California). Healing with qigong and quantitative effects of qigong measured by a muscle test. [6/30/05]. *J Amer College of Traditional Chinese Medicine.* 1989; 7(3):13-19; ISSN: 0739-571X. Abstract: Part 1 describes two case studies to illustrate the healing power of the Chow System which includes qigong. Part 2 is a quantitative study of the effects of certain qigong maneuvers related to healing on the body energy of eight subjects. Changes in body energy were inferred from an arm muscle test that was made after each of a given sequence of six qigong maneuvers given to each of the subjects. Measurements were made of the time dependence of the force required to lower the subject's arms and of the arm height. The qigong maneuver was a

nonverbal process initiated by qigong master Dr. Chow whose intention was to weaken (disperse) or strengthen (tonify) the body energy of the subject. Related qigong maneuvers are used in healing to balance the body energy. The time duration of the resistance to the downward force was used a parameter to characterize the body energy. The results show that the subjects' resistance to the downward force was decreased by an energy dispersing maneuver and restored by an energy tonifying maneuver. Statistical analysis of the group of subjects shows that the means of the time duration for the dispersed and tonified slates were significantly different (P). These findings have consequence in diverse fields, such as chiropractic, psycho- neuroimmunology, bioenergetics, acupuncture, Chinese medicine and health care.

26. Sancier KM and Hu B (Qigong Institute, East West Academy of Healing Arts). Medical applications of qigong and emitted qi on humans, animals, cell cultures & plants: review of selected scientific research [6/30/05]. Am J. Acupuncture. 1991; 19(4):367-377; ISSN: 0091-3960. Abstract: In the past few years, many studies have been conducted to investigate the scientific basis of Chinese qigong and emitted qi and to document their medical benefits. Most of this information has been generated in China and published in Chinese. for the benefit of Western scientists and medical practitioners, we discuss selected scientific reports pertaining to the effects of qigong exercise and emitted qi that were presented at two international conferences held in 1990. The reports document the medical benefits of qigong exercise and some of the significant changes produced when qigong practitioners or "masters" emit qi to living systems: humans, animals, cell cultures and plants. The research described in these reports appears to have followed satisfactory scientific protocol.
27. Sancier KM 1 and Holman D 2 (Qigong Institute, Menlo Park, CA 94025, USA. qi@qigonginstitute.org [1]/American College of Traditional Chinese Medicine, San Francisco, CA [2]). Multifaceted health benefits of medical qigong [6/30/05]. J Altern Complement Med. 2004; 10(1):163-5. Abstract: **Introduction** It is a challenge for the Western mind to understand the function of *Qi* in the context of bodily functions as defined by science. According to Chinese medicine and *Qigong* theory, *Qi* has an infinite number of functions in the body. The foundation of *Qigong* and TCM theory dictates that intention (*Yi*) directs the movement of *Qi*, which in turn directs the flow of blood in the body. Increased or decreased electrical activity in specific areas of the body determines blood flow and fluid balance, accumulation and dispersal of substances. The practice of *Qigong* is the act of bringing awareness and skill to direct the function and movement of *Qi*. The correct movement of *Qi* is a force that engages the body's natural tendency toward homeostasis. Continued practice provides reinforcement of the body's inclination toward homeostasis and therefore toward optimal use of all its functions and potential. What are called "special abilities" or "psychic powers" that sometimes develop in *Qigong* practice are simply the product of our natural capacity in the refined human state. For health maintenance, the *Qigong* practitioners does not have to be an expert. Almost anyone can learn to practice *Qigong* to maintain and improve his or her own health. The objective of the exercises is to strengthen the *Qi* in the body and remove obstructions to *Qi* flow that may have developed due to injury, emotional states, diet, disease or other factors. Conversely, obstruction of *Qi* flow can also produce disease, Of all the energy medical practices, *Qigong* has the most developed theoretical basis and has been subjected to the most extensive research. In China, the collected knowledge about the therapeutic benefits of *Qigong* was developed over thousands of years. Medical *Qigong* is now practiced in clinics and some hospitals that integrate traditional Chinese medicine (TCM) and conventional Western medicine. In Western hospitals *Qigong* is among several complementary practices used including Therapeutic Touch, Mindful Meditation and Reiki. Clinical Research Demonstrates the Multifaceted Effects Qigong In the early 1980's Chinese scientists initiated research on the health and healing claims of *Qigong*. Of the hundreds of research studies that were performed, few were published because suitable journals were unavailable. However, about 1400 reports were published as abstracts in the proceedings of conferences. English abstracts of these reports as well as those from scientific journals are collected in the Qigong Database™ that presently contains more than 2000 records of *Qigong* studies and is available from the Qigong Institute. One of the authors has discussed the medical benefits of *Qigong*. Wang and Xu, two western-trained doctors in China explored some of the multiple

health benefits of self-practice Qigong as summarized in the table. Activities of two messenger cyclic nucleotides Anti-aging Antithrombin III Asthma Blood flow to the brain for subjects with cerebral arteriosclerosis Blood pressure Blood viscosity Bone density Cerebral functions impaired by senility Endocrine gland functions Erythrocyte deformation index Factor VIII-related antigen Hypertension Immune system Longevity, 50% greater; after *Qigong* 30 min/twice daily, 20 years Plasminogen activator inhibitor Serum estradiol levels in hypertensive men and women Serum lipid levels Sexual function Strokes, 50% fewer after *Qigong* 30 min/twice daily, 20 years

One of the prime benefits of *Qigong* is stress reduction, and a main ingredient of practice is intention (i.e., *Yi*) that uses the mind to guide the *Qi*. While *Qi* itself has not been measured, multiple types of measurements demonstrate the effects of *Qi* on the body. For example, simultaneous measurements of the interaction between a *Qigong* master and receiver included respiration, EEG, vibrations, blood pressure, skin conductivity, and heart rate variability. Different physiological measurements have sought information about the effects of *Qigong* on the brain and emotions. These include measurements by high-resolution electroencephalography (EEG), functional MRI (fMRI), neurometer measurements, and applied kinesiology. Neuroimaging methods were used to study regional brain functions, emotions and disorders of emotions. Differences were found on the effects on the brain during meditation by *Qigong* and by Zen meditation. (Kawano K 1996) The effects of emitted *Qi* (*waiqi*) has also been extended to cell cultures, growth of plants, seed germination, and reduction of tumor size in animals. Spiritual healing, which involves the mind, has been the subject of two volumes by Benor. His discussions also include scientific studies describing the beneficial effects of prayer on subjects' health. The work of Richard Davidson and Paul Ekman, researchers of the Mind and Life Institute, may go a long way to illustrate the role of intention alone on the brain and body. In current studies underway at University of California at San Francisco Medical School and University of Wisconsin, they are observing the electrical mechanisms in the brains of highly trained Buddhist lamas during various states of focused intention. Using functional, fMRI, high-resolution EEG and state-of-the-art reflex monitoring, their early results illustrate that electrical activity and blood flow in the brain can be directed by conscious intention. Through systematic and repeated practice of intention, well-practiced lamas have succeeded in training the brain to direct electrical activity away from areas associated with the biochemistry of stress, tension and disturbing emotional or physical states (i.e., the amygdala and right prefrontal cortex) and increase activity in the area associated with the biochemistry of healthful emotional and physical states (i.e., the left prefrontal cortex). Moreover, they have observed that the state of conscious intention on compassion engages a state of relaxation and well being which surpasses even that achieved during a state of rest. The early results of this research suggests that parts of the brain thought previously to be fixed in function, such as the stress reflexes of the reptilian brain, may in fact be plastic in nature, able to be changed, shaped and developed through ongoing practice of conscious intention. (Lama Dalai 2003)

Cost containment of healthcare is a subject of vital contemporary interest. For example, in the treatment of asthma self-applied *Qigong* led to significant cost decreases, such as reduction in days unfit for work, hospitalization days, emergency consultation, respiratory tract infections, and number of drugs and drug costs.

Recommendations The vast research of medical benefits of *Qigong* offers a rich source of information for benefiting mankind. Medical cost containment is an attractive benefit of *Qigong* practice and should be further explored to provide healing potential without side effects. The science and art of *Qigong* may open a window into new thinking about health, medicine, psychology and spirituality. It is a physical, mental and spiritual practice that continuously supports our natural tendency toward homeostasis. If that tendency is supported with regularity, allowing one to hover more closely to that point of balance, then the entire being can experience a tremendous evolutionary advantage. Innate abilities have an opportunity to develop; the senses more keen, organ function more consistent and strong, the sympathetic nervous system relaxed, parasympathetic nervous system efficient, the mind relaxed, alert, clear, freely channeling messages in a multitude of new and diverse directions. From a scientific point of view, the promise of *Qigong* practices provides new avenues for understanding some of the subtle aspects of human life and its natural inclination to strive for balance. For clinicians it shifts our focus from a battle with disease to a cultivation of health. For practitioners of *Qigong*, it gives us an experiential

understanding of greater balance within ourselves and of the cultivation our individual physical, mental and spiritual potential.