

Multifaceted Health Benefits of Medical Qigong

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Ed. Note: These two surveys of medical qigong (chi kung) research by Kenneth M. Sancier, Ph.D., et al. provide an excellent glimpse of the powerful effects of qigong practice in healing a wide variety of chronic illnesses and dramatically extending lifespan. In Dr. Sancier's second article, Anti-Aging Benefits of Qigong, he cites three separate long-term studies in China, ranging from 20 to 30 years, and involving nearly 1000 patients suffering from high blood pressure. The practice of qigong was found to cut the mortality rate of fatal strokes by 50% ! They also found that qigong allowed patients to take smaller doses of medicine.

Prof. Sancier is a former research scientist at Stanford Research Institute. His curiosity and scientific background inspired him to collect a database of 3500 scientific studies on qigong and similar kinds of "energy medicine". His impressive scientific background is given in the full biography at the end of the article.

From the conclusion to his Anti-Aging Benefits of Qigong article:

"This review deals with a small fraction of the large collection of clinical research on medical applications of qigong. The information presented is intended to illustrate the potential of qigong exercise for restoring normal body functions in people with chronic conditions, many of which accelerate the aging process. The main conclusion from many studies is that qigong exercise helps the body to heal itself. In this sense, qigong is a natural anti-aging medicine. Two studies indicate that qigong exercise is superior to some physical exercises.

Qigong can complement Western medicine in many ways to provide better healthcare. For example, qigong has special value for treating chronic conditions and as a preventive medicine, whereas Western medicine has special value for treating acute conditions. There are many medical applications of qigong that can complement Western medicine to improve health care. Some examples include chronic problems such as hypertension, cardiovascular disease, aging, asthma, allergies, menstrual and sexual function, neuromuscular problems, and cancer."

The Anti-Aging Benefits of Qigong article is posted below, following the first article. Both are posted on <http://www.qigonginstitute.org/html/papers>. (those are pdf version with graphs). Qigong Institute is non-profit and is sustained by donations and low-cost user fees for their Qigong & Energy Medicine Database.

www.QigongInstitute.org is the best place for deep research into scientific study of medical qigong benefits. But please note that the Qigong Institute does NOT take on the job of recommending which type of qigong is best for which disease.

For advice on the best qigong (chi kung) form for your medical condition you should contact info@healingdao.com. All of the qigong video/DVD's offered on www.healingtaousa.com could be classified as medical qigong. With the exception of people with terminal illness, almost everyone will benefit most by starting with Qigong (Chi Kung)

Fundamentals 1 & 2. They work on healing simultaneously all organ and meridian systems using the Inner Smile, Six Healing Sounds, and Microcosmic Orbit.

Qigong (Chi Kung) Fundamentals 3 & 4 work on tendons and deep bone marrow (and thus blood) issues. Deep Healing Chi Kung and Primordial Qigong are both longer (20-45 minute practice time) medical qigong forms that may be invaluable for people to both prevent and heal serious conditions, including terminal conditions such as cancer.

- Michael Winn

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By **Kenneth M. Sancier, Ph.D. and Devatara Holman MS, MA, Lac**

Introduction

It is a challenge for the Western mind to understand the function of Qi (“chi”) 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 do 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.

Qigong Most Developed Form of Energy Medicine

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 Multifaceted Effects of 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 (Ed.: now contains 3500 studies including all types of energy medicine) and is available from the Qigong Institute. (Sancier KM 2000)

One of the authors has discussed the medical benefits of Qigong. (Sancier KM 1994; Sancier KM 1996a; Sancier KM 1996b; Sancier KM 1999; Sancier KM Weintraub 2000) Wang and Xu, two western-trained doctors in China explored some of the multiple health benefits of self-practice as summarized in the table (Wang CX 1991; Wang CX 1993; Wang CX 1995):

Qigong Biological Benefits

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. (Yamamoto M 1997)

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. (Sancier KM 1991) Spiritual healing, which involves the mind, has been the subject of two volumes by Benor. (Benor DJ 2001; Benor DJ 2002) 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 along way to illustrate the role of intention alone on the brain and body. (Davidson JD 1999) 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. (Reuther I 1998)

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.

- Kenneth Sancier, PhD.

(reference list to the article follows the biography of Dr. Sancier)

Second article Anti-Aging Benefits of Qigong, follows the references.

It has more detailed examinations of studies on the different kinds of disease benefiting from chi kung/qigong.

Biography

Dr Sancier is the founder and Chairman of the Board of Directors of the Qigong Institute. He is a professor at the American College of Traditional Medicine in San Francisco. He received a Ph.D. from Johns Hopkins University and has carried out basic and applied chemistry research. As a research chemist he published 70 articles in scientific journals and holds 12 patents.

He is an editor of the Journal of the International Society of Life Information Science (JISLIS), Director of the California Information Center of ISLIS, on the Advisory Board of the Journal Of Alternative Therapies, and is on the Council of the World Academic Society Medical Qigong.

Since 1986, he applied his scientific background to study and evaluate reports on Qigong that claimed health and healing benefits. This evaluation depended on a series of activities including

participating in international Qigong conferences in China, Japan, Canada and USA and sponsoring the First World Congress of Qigong in San Francisco.

To summarize the information on Qigong that he had collected, he led the development of the Computerized Qigong Database.TM The Database is a compellation of over 3500 citations on qigong and energy medicine. With English abstracts of almost all research on Qigong since 1986, it provides means to search the entire collection using any search word(s). The Database, which is available on a CD from the Qigong Institute, has been used as a source for six books, 7 dissertations, and numerous research projects.

He has carried out and published experimental studies of mind/body interactions. Including experimental studies and reviews, he has published about 25 papers in peer reviewed journals.

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Anti-Aging Benefits of Qigong

by **Kenneth Sancier Ph. D.**

History of Qigong Research in China

In the early 1980's, scientists in China began to study the medical benefits claimed for qigong. Since then, research on hundreds of medical applications of qigong have been reported in the Chinese literature. Of special interest for the present article are clinical reports of the medical benefits of qigong that claim to retard or reverse some diseases associated with aging.

Most of the original research was reported in Chinese, but access in English to most of this material is possible by reference to the proceedings of international conferences of qigong. Since 1986, ten such proceedings contain about 840 abstracts of talks given at the conferences, more than half of which are in English.

These abstracts, along with about 160 abstracts of articles in the scientific literature, have been organized as a computerized database. The database enables searches and development of bibliographies across this entire body of information by using any key word. The clinical outcomes reported in this article are partly based on material in the database and partly on the author's person contacts with researchers.

The word qigong is a combination of two ideas: qi the vital energy of the body, and gong the skill of working of the qi. Medical qigong for health and healing consists primarily of meditation, physical movements, and breathing exercises. Qigong practitioners develop an awareness of qi sensations in their bodies and use their mind, i.e., intention, to guide the qi in the body. The benefits of qigong are said to extend beyond health and healing to enhance spiritual life and even special abilities, such as psychic powers.

Internal Self-Practice & External Transmission of Medical Qigong

Medical qigong is divided into two parts: internal and external. Internal qi is developed by individual practice of qigong exercises. When qigong practitioners have sufficiently mastered the skill, they can "emit" qi (external qi or waiqi in Chinese) for the purpose of healing another person. There are many scientific reports of the medical existence and efficacy of emitted qi. The present article focuses mainly on internal qi because almost everyone can learn qigong exercises for maintaining health and for self-healing, whereas, there are a limited number of skilled qigong masters available for healing.

Range of Biological Benefits of Qigong

There are numerous reports of the effects of emitted qi on living systems and the functions and organs of the human body. The present author reviewed some examples of medical applications of qigong and emitted qi on humans, animals, cell cultures, and plants, and he also published some of his experimental research on physiological effects of qigong. He discussed some clinical and experimental evidence showing that qigong exercise and external qi affects various functions and organs of the body.

A short list of some of the functions and organs affected by qigong, and the measurement techniques employed (in parentheses), include: the brain (EEG and magnetometer); blood flow (thermography, sphygmography, and rheoencephalography); heart functions (blood pressure, EKG, and UCG); kidney (urinary albumin assay); biophysical (enzyme activity, immune function, sex hormone levels (laboratory analysis); eyesight (clinical); and tumor size in mice.

Clinical studies on anti-aging benefits of qigong

Several clinical studies will be described to illustrate the scope of research on medical applications of qigong to treat chronic medical conditions that may affect the aging process. Some details may be omitted because of space limitations. The critical evaluation of the research studies will be left to medical specialists.

1) Therapeutic balancing of the meridians and functions of the body

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 (EAV). In EAV the electrical conductance of the skin above individual acupuncture points is measured using low voltage and low 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" that may occur during the

measurement when the conductance reaches an apparent maximum value but then decreases before leveling off.

Measurements were made at 24 acupuncture points at the ends of the 12 meridians in the fingers and toes of subjects and were made by the same operator and equipment. The subjects were asked to perform a qigong exercise of their choosing for 10 to 15 minutes, for example, sitting or standing meditation or moving qigong. Two series of EAV measurements were made before and after healthy subjects practiced qigong.

In the first series, 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.

These preliminary results show that internal qigong practice can make significant changes in the therapeutic balancing of the meridian and organ systems.

In a similar type of study, the electric current at acupuncture points on 14 meridians was measured using a single square wave voltage pulse technique. Both a qigong master, who emitted qi, and a qi-receiver were measured simultaneously and continuously. The results show that internal and external qigong produce different values in some measurement parameters, and also some synchronous behavior was observed between the sender and receiver.

2) Clinical studies of effects of qigong on hypertensive patients

Several groups in China have investigated the effects of qigong on hypertension (i.e., high blood pressure). The research of Wang, Xu and coworkers of the Shanghai Institute of Hypertension was selected for discussion because it serves as a model for the many different effects that qigong may have on organs and functions of the body. For these studies, 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. The qigong exercise consists of a combination of sitting meditation and gentle physical movements that emphasizes a calm mind, relaxed body, and regular respiration.

In 1991, the Shanghai group reported a 20-year controlled study of the anti-aging effects of qigong on 204 hypertensive patients. Subsequently, they reported a 30-year follow-up on 242 hypertensive patients, and more recently, the researchers reported an 18-22 year study of 536 patients. The patients were randomly assigned to the two groups. To control blood pressure, the patients were given the same hypotensive drug and in the same hospital. None of the patients smoked.

Blood Pressure

The effect of qigong exercise on blood pressure is shown graphically in Fig. 1. The blood pressure (systolic and diastolic) in millimeters mercury is plotted as a function of time over 20 years for the group consisting of 242 patients, 122 in the qigong group and 120 in the control group. During the first two months, the blood pressure of all patients dropped in response to the hypotensive drug. Subsequently, and over the period of 20 years, the blood pressures 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.

Fig. 1. Effect of qigong on blood pressure of hypertensive patients over 20 years. Qigong group (n=104) practiced 30 min/day twice/day, control group (n=100).

Mortality and Stroke

The incidences of mortality and stroke for the 30-year study are shown in Fig. 2. These results show that 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. These results clearly show that qigong has significant potential for preventing strokes and extending life.

Improvements in heart function and microcirculation

Aged hypertensive patients usually are found to have a deficiency of Heart-energy, which often leads to a weakened function of the left ventricle and a disturbance of microcirculation. The researchers evaluated the effects of qigong for 120 aged patients by using ultrasonic cardiography (UCG) and indices of microcirculation.

Experiments showed that the left ventricular function (LVF) in the hypertensive aged group (80 cases) was lower than that in the aged normal blood pressure group (40 cases), while the LVF in the deficiency of Heart-energy hypertensive patients (46 cases) was lower than in the non-deficiency Heart-energy hypertensive patients (34 cases).

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. Significant changes did not occur in the group without Heart-energy deficiency.

Quantitative evaluation of nailfold disturbances in microcirculation was made on the above groups by observing 10 indices of abnormal conditions: configuration of micrangium, micrangium tension, condition of blood flow, slowdown of blood flow, thinner afferent limb, efferent limb and afferent limb ratio, color of blood, hemorrhage, and petechia. The results showed that hypertension had an accelerating effect on the disturbance of microcirculation. The incidence of disturbance of 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% ($p < 0.01$).

The results suggest that qigong exercise has beneficial effects on Heart-energy and regulation of the blood channel, and qigong seems to have improved abnormal conditions of blood circulation.

Improvement in sex hormone levels

One consequence of aging is that the levels of sex hormones change in unfavorable directions. For example, female sex hormone (estrogen) levels tend to increase in men and decrease in women. Three studies indicate that qigong exercise can reverse this trend. The effect of qigong exercise on plasma sex hormone levels was determined for hypertensive men and women. The sex hormones levels were measured before and after qigong practice for one year.

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 practice 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). The testosterone levels (T) of both groups decreased about 7%. The value of E2 for the qigong group (47.7 pg/ml) approached that of healthy men (42.2 ± 5.8 pg/ml) of the same age but without hypertension or cardiovascular, pulmonary, hepatic, renal, or endocrine diseases ($p < 0.05$).

For women (ages 51 to 67, the number in the group is not available), the aging process was associated with failure of ovarian function manifested by decreased E2 and increased T levels. Qigong practiced one year resulted in an increase of E2 from 40.9 ± 3.5 to 51.6 ± 3.5 pg/ml, a value about equal to that of normal menopausal controls without hypertension or cardiovascular, pulmonary, hepatic, renal, or endocrine diseases. The value of T was also increased by qigong from 25.5 ± 2.2 to 37.2 ± 2.2 ng/dl.

The favorable changes in estradiol levels, E2, brought about by qigong are summarized in Fig. 3 for both men and women.

In an auxiliary study, the 24-hour urinary estradiol levels were determined in 30 men ages 50 to 69. Qigong for one year resulted in a decrease of 31% in E2 and a decrease of 54% in the estradiol/testosterone ratio (E2/T). These changes were accompanied by improvements in symptoms associated with Kidney deficiency hypertension, such as soreness, dizziness, insomnia, hair loss, impotence, and incontinence. The average score for these symptoms was changed favorably by qigong from 5.5 ± 2.3 to 2.8 ± 1.3 ($p < 0.001$).

Ye Ming and co-workers reported similar favorable changes in plasma sex hormone levels E2 in 77 male and female qigong exercisers after 2 months qigong compared with 27 controls. They did not observe significant changes in testosterone.

The three studies above show that qigong exercise can help restore the sex hormone levels that had deteriorated because of aging.

Changes in blood chemistry in hypertensive patients

Wang, Xu and co-workers made a series of determinations indicating the profound effects that 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). In another study, they reported that qigong exercise beneficially changed the activities of two messenger cyclic nucleotides (cAMP and cGMP).

Reversing symptoms of senility

To study the mechanism of keeping fit by qigong, a controlled study was made of 100 subjects classified either as presenile or with senile impaired cerebral function. The subjects were divided into two groups of 50 people each with a mean age of 63 years and with a similar distribution of age and sex. The qigong group practiced a combination of static and moving qigong. The control group exercised by walking, walking fast, or running slow. According to TCM method of classifying the vital energy, more than 80% of the patients in each group were classified as deficient in vital function and vital essence of the Kidney. Criteria for judging outcome were based on measuring clinical signs and symptoms including cerebral function, sexual function, serum lipid levels, and function of endocrine glands.

After six months, 8 of the 14 main clinical signs and symptoms in the qigong group were improved above 80%, whereas none of the symptoms in the control group were improved above 45%. These results suggest that qigong can reverse some symptoms of aging and senility. In this regard, qigong exercise is superior to walking or running exercises.

Enhanced activity of anti-aging enzyme SOD

Superoxide dismutase (SOD) is produced naturally by the body but its activity declines with age. SOD is often called an anti-aging enzyme because it is believed to destroy free radicals that may cause aging. The effects of qigong exercise to treat disorders of retired workers were studied by Xu Hefen and coworkers and included determinations of plasma SOD.

For their study, 200 retired workers, 100 males and 100 females, ranging in age from 52 to 76 were divided into 2 groups: the qigong exercise group and the control group, and each group consisted of 50 males and 50 females. The main qigong exercise was Emei Nei Gong (one kind of qigong exercises of the Emei School), and was practiced at least 30 minutes a day.

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 μ /g Hb) and than in the control group (1700 μ /g Hb), and this difference was significant ($p < 0.001$). This study shows that qigong exercise can stimulate physical metabolism, promote the circulation of meridians and regulate the flowing of qi and blood, thus preventing and treating disorders of aging and promoting longevity.

Cardiovascular function

Several studies reveal the potential benefits that qigong may have for improving the cardiovascular function of those with heart disease as well as old people. This conclusion is based on three studies reporting that 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.

Before entering the Tibetan highland, 66 healthy young men were divided into two groups: a qigong group of 32 men who did Qiyuan Qigong exercise for 4 weeks, and a control group of 34 men who exercised to radio music. The two groups of men rapidly entered the highlands from a lower altitude. Before and after entering the highland, measurements were made of symptoms of altitude sickness and physiological changes. The qigong group suffered less altitude stress than the control group as measured by blood pressure, heart rate, oxygen consumption, microcirculation on the apex of tongue and the nail fold, and the temperature at the Laogong point of the left hand ($p < 0.01$). The researchers suggest that qigong can prevent stress from altitude changes.

In another study of changes in altitude, healthy young men were divided into three groups. Forty males were in the qigong group and practiced Qiyuan qigong for 4 weeks prior to entering the highlands; 40 men were in the control group and exercised to radio music for 4 weeks prior to entering the highlands; and 40 males were residents living at high altitudes. The results show that the integral value of symptoms of acute mountain sickness was lower in the qigong than in control group ($p < 0.01$ to 0.05). Pulmonary ventilation of the qigong group was significantly improved compared with the control group ($p < 0.01$ to 0.05), and nearly equal to the resident group.

In another study, air force pilots were randomly divided into two groups: a qigong group of 22 men who had practiced Qiyuan Qigong exercise for eight weeks, and a control group of 18 men who did physical exercise for eight weeks before entering the Tibetan highlands. Microcirculation was measured at tongue apex and the nail fold, and also from the temperature at the Laogong point in palm of the left hand. When the men entered the high altitude, abnormal blood pressure and microcirculation of tongue apex and nail fold occurred in both groups. The abnormalities were statistically less in the qigong group than in the control group ($p < 0.01$). The temperature at Laogong kept steady in the qigong group, but was reduced in the control group ($p < 0.05$).

The results of these three studies with healthy subjects lead to the conclusion that qigong also should be effective in improving the health of people with cardiovascular conditions including the aged. In fact several research studies have reported such beneficial effects of qigong on cardiovascular diseases. The three studies also provide evidence that qigong exercise is superior to physical exercise such as calisthenics.

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. During these studies, a decrease in plasma cholesterol was also noted. These results may offer hope to people with cerebral arteriosclerosis.

Cancer

Feng Lida pioneered in research showing that emitted qi from qigong masters produced marked changes in cell cultures of cancer cells from mice. Several studies reported the effects of emitted qi on tumors in animals. For example, emitted qi was reported to inhibit the growth of implanted

malignant tumors in mice but did not destroy the tumors. Encouraged by the results with animals, researchers carried out clinical research on the effects of qigong on human subjects with cancer.

In a clinical study of qigong as a therapeutic aid for patients with advanced cancer, 127 patients with medically diagnosed malignant cancer were divided into a qigong group of 97 patients and a control group of 30 patients. All patients received drugs, and the qigong group practiced qigong for more than 2 hours a day over a period from 3 to 6 months.

The results summarized in Fig. 4 show that both groups improved, but the qigong group showed improvements four to nine times greater than the control group in strength, appetite, diarrhea free, and weight gain of 3 kg. The phagocytic rate, which is a measure of the immune function, increased in the qigong group but decreased in the control group. There are claims that qigong can cure cancer. Researchers, who seem to be more conservative, generally express the opinion to the author that qigong can at least slow the growth of cancerous tumors and reduce their size.

Combination therapy of qigong & drugs is superior to drug therapy alone. There is ample evidence in the literature that therapy by a combination of qigong exercise and drugs is superior to that of drugs alone. The advantages of a combination therapy of qigong and drugs over drugs alone were discussed earlier in this paper for hypertension and cancer.

The mechanism of this apparent synergism is not entirely understood, but undoubtedly relates to the fundamental mechanism of qigong. Qigong is believed to remove blocks to the ready flow of the qi (energy), blood, oxygen and nutrients to all cells of the body as well as to promote removal of waste products from cells of the body. Blocks to energy (qi) flow may result from injury, disease or stress.

Increases in qi flow and blood circulation help nourish diseased or stressed tissue, providing a means for the body to heal itself. This mechanism suggests that qigong also could promote drug uptake to tissue and cells via increased blood circulation. Omura's research shows that drug uptake was increased by using qigongized paper (i.e., paper to which emitted qi was sent) applied to afflicted area of the body.

Conclusions

This review deals with a small fraction of the large collection of clinical research on medical applications of qigong. The information presented is intended to illustrate the potential of qigong exercise for restoring normal body functions in people with chronic conditions, many of which accelerate the aging process. The main conclusion from many studies is that qigong exercise helps the body to heal itself. In this sense, qigong is a natural anti-aging medicine. Two studies indicate that qigong exercise is superior to some physical exercises.

Qigong can complement Western medicine in many ways to provide better healthcare. For example, qigong has special value for treating chronic conditions and as a preventive medicine, whereas Western medicine has special value for treating acute conditions. There are many medical applications of qigong that can complement Western medicine to improve health care. Some examples include chronic problems such as hypertension, cardiovascular disease, aging,

asthma, allergies, neuromuscular problems, and cancer. These areas of public health deserve consideration by the Western medical establishment.

References

Footnotes

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 2. Some of the material in this article was adapted from the article, "Medical Applications of Qigong," by K.M. Sancier, Ph.D., and published in *Alternative Therapies in Health and Medicine*. 1996;2 (1): 40-46.
 3. Qigong Database^a is available from the Qigong Institute, East West Academy of Healing Arts, 450 Sutter Street, Suite 2104, San Francisco, CA 94108, USA.
 4. The p-value is the probability that two quantities are not the same: the smaller the p-value smaller the probability and the more significant the result.
 5. Wang C, Xu D. Private communication, May 1995.
 6. Duration of the study is not available. Endnotes
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