

Evidence-Based Health Benefits of Qigong

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Like *t'ai chi*, *qigong* (also known as *Qi Qong* or *Chi Kung*, and pronounced “chee gung”) was originally developed in ancient China as a martial art and is now also practiced as a mind–body therapy or exercise (also referred to as mindful exercise; aerobic exercise; exercise therapy, practice or psychosocial intervention; and meditation in movement) for promoting wellness or spiritual growth. Growing evidence indicates that *qigong* offers similar health benefits although it is not as well-known in the West as *t'ai chi*. This article examines *qigong* and reviews the research relating to its efficacy for treating specific conditions and for promoting overall health.

Background

Qigong means cultivating the vital energy life force (*qi*) by using skills developed through steady practice (*gong*). All styles of *qigong* integrate rhythmic moving or stationary body postures, deep-breathing techniques, and focused attention aimed at producing a healthy lifestyle. Body/mind/spirit balance may be achieved by adding this practice to one’s daily routine, regardless of ability, age, or belief system, according to the National Qigong (Chi Kung) Association.¹

Medical *qigong* is defined as “coordination of gentle exercise and relaxation through meditation and breathing exercise based on the Chinese medicine theory of energy channels,” according to researchers at the University of Sydney in Australia.²

According to the National Qigong (Chi Kung) Association USA (see Resources), when the dimensions of mental intent, specific breathing techniques, and attention to the meridians (energy pathways described in Traditional Chinese Medicine [TCM]) along which *qi* moves are added, “the benefits of exercise increase exponentially.” Qualified instructors can be found through organizations or referrals by acupuncturists.¹

According to the National Center for Complementary and Alternative Medicine (NCCAM), *qigong*—like *t'ai chi*—is considered to be a component of TCM, a mind–body intervention and putative energy therapy.³ *Qigong* differs from *t'ai chi* primarily in that some exercises may be done in a sitting or lying position. Yet, as in *t'ai chi*, *qigong* entails focused breathing from the lower *dantian* (an energy center located a few inches below the navel), meditation, and standardized stances to harness internal *qi* for the development of stamina and a resilient immune system.⁴

Components of a Typical Qigong Routine

The components of a typical *qigong* routine involves *dantian* breathing, warmup exercises, exercises appropriate for one’s age group and health issues, traditional stances, and meditation, according to Deborah Davis, L.Ac., M.A.O.M. (Master of Oriental Medicine), who has a private practice, in Ashland, Oregon, that involves using *qigong*, acupuncture, self-administered massage for healing, healing sounds and herbs, and intuitive healing. Ms. Davis has designed exercise routines specifically for women at each stage of life over 40 and for particular health concerns. For example, she has routines to address premenstrual syndrome; breast and heart health; sexuality; and cancer, depression, menopause, insomnia, and osteoporosis. She integrates the other areas of her practice with *qigong*.⁴

Cautions/Contraindications

As with patients who are contemplating beginning any new exercise program or therapy, any patient who wishes to consider engaging in *qigong* should be told to consult with a health practitioner, especially if the patient has health concerns or is

pregnant. *Qigong* should be not be practiced by patients who have acute inflammation, fever, or internal bleeding, or during heavy menstrual bleeding. In addition, while *qigong* may be recommended for women who have cancer, adjunctive breast self-massage may be contraindicated because of its potential to cause such cancer to metastasize, according to Ms. Davis.⁵ A clinical study is underway to determine whether *qigong* improves surgical outcomes for women with breast cancer, so this issue remains unresolved at this time.⁵

Research Findings

Qigong has been studied with respect to many of the same health benefits claimed, and in many cases, supported for *t'ai chi*. In addition to the aforementioned breast-cancer study, the U.S. National Institutes of Health (NIH) lists recent clinical trials on *qigong* designed to study its effects on depression in cardiovascular disease (CVD); blood pressure in hypertension; and pain in knee osteoarthritis (OA), fibromyalgia, pediatric arthritis, and neck problems. Other studies on the NIH list include *qigong's* effects on healthy older adults and use for maintaining weight loss.⁵ The primary focus of these trials is on internal *qigong*, which involves the person's own practice of exercise and focused attention, rather than on external *qigong*, which involves a trained master directing his or her *qi* to a patient for healing.

Cardiovascular Conditions

A systematic review of research literature included a dozen randomized clinical trials (RCTs) on *qigong*. Seven of these RCTs compared *qigong* in combination with conventional drug therapy versus antihypertensive drugs alone. Of these, two RCTs with adequate data showed improvements in sys-

Qigong lowered systolic blood pressure significantly, compared with wait-list control.

tolic and diastolic blood pressure (BP). In two RCTs, *qigong* lowered systolic BP significantly, compared with wait-list control. Three additional RCTs on *qigong* combined with conventional therapy, compared with muscle relaxation combined with conventional treatment, or as a sole treatment, compared with another form of exercise, showed positive findings on some relevant outcome measures. However, researchers cautioned that the methodologic quality of the trials tended not to be sufficiently rigorous.⁶

Similarly, in a meta-analysis of nine RCTs of self-practiced *qigong* (involving a total of 908 cases) compared with nontreatment controls for essential hypertension, *qigong* resulted in a mean reduction in systolic BP of 17.03 mm Hg. However, *qigong* was not superior to the use of antihypertensive drugs or conventional exercise by active controls.⁷



Deborah Davis, L.Ac., M.A.O.M., a private practitioner in Ashland, Oregon. Photo courtesy of Ms. Davis.

An RCT investigated whether a 16-week medically assisted *qigong* training program for physical rehabilitation of patients with stable atrial fibrillation improved the patients' functional capacity. Patients trained in *qigong* ($n = 43$; 30 men and 13 women; mean age = 68) walked an average 27% (114 meters [124.66 yards]) more on a 6-minute walk test after 16 weeks of *qigong* practice than at baseline, and 14% (57 meters [62.33 yards]) more at a 16-week follow up than the control group, which received standard treatment.⁸

Diabetes and Metabolic Syndrome

Eleven (of 69) studies were deemed methodologically sound in a systematic review of English- and Chinese-language *qigong* intervention studies since 1980 on management of diabetes. There were significant positive associations between participation in *qigong* and fasting and improved test results for 2-hour oral glucose tolerance, blood glucose, triglycerides, and total cholesterol. Effects on insulin and HbA(1c) were inconsistent.⁹

A subsequent single-group, pre-post feasibility study with 11 subjects with elevated blood glucose (8 females and 3 males; ages 42–65) found that a *t'ai chi* and *qigong* exercise program for 1–1.5 hours, 3 times per week for 12 weeks, resulted in significant im-



Qigong and *t'ai chi* teacher training presented by the Institute of Integral Qigong and Tai Chi. Photo credit: Omega Institute, New York.

improvements in several indicators of metabolic syndrome: bone-mineral density (BMD); waist circumference; BP; glucose control; and insulin resistance. Participants also had improvements in psychologic variables and adherence to practice at home.¹⁰

In another study, 36 age- and gender-matched patients with type 2 diabetes were randomized to receive a 4-month *qigong* intervention of 2-hour weekly sessions plus usual care or to serve as controls. The *qigong* participants had significant improvements in HbA1c level, C-peptide level, and mood (reduced anxiety), but not in caloric intake, lipid metabolism, or body-mass index (BMI).¹¹

Pain

In a pilot study, 10 women with severe fibromyalgia experienced significant improvements in tender-point count, pain, anxiety, and other symptoms after *qigong* therapy. Patients completed five to seven sessions of *qigong* for approximately 40 minutes over 3 weeks, with pre- and post-treatment assessment and a 3-month follow-up. Some regression occurred at follow-up, but the patients' conditions were still improved compared with baseline measures.¹²

In an RCT on 7-weeks of *qigong* training involving 57 women with fibromyalgia, significant improvements were noted in the intervention group ($n = 29$) in pain and psychologic health, compared with wait-list controls ($n = 28$) post-treatment and at a 4-month follow-up. Control-group women, who subsequently received the training, had comparable results following treatment. The participants reported a high degree of completion and satisfaction with the intervention.¹³

A pilot randomized study of *qigong* in community-residing patients with traumatic brain injury found improved mood and self-esteem after 8 weeks of 1-hour per week sessions.¹⁴ In a randomized controlled study of 117 elderly patients with chronic neck pain, however, 24 sessions of *qigong* over a 3-month period did not result in reduced pain and disability at 3- and 6-month follow-ups, compared with other exercise therapy or wait-list controls.¹⁵

A functional magnetic resonance imaging (fMRI) study examined the brains of 4 *qigong* masters who underwent induced peripheral pain-monitored physiologic functioning

before and at 15 minutes following *qigong* practice. Activity that appeared in brain regions (including the cingulate cortex, thalamus, and cerebellum) before fMRI testing was suppressed during the state induced by *qigong*, while the response amplitude was increased in the second somatic sensory cortex [SII-insula region].^{16,17,*}

A systematic database review identified five RCTs, involving patients with pain conditions, demonstrated that external *qigong* alleviated pain.¹⁸ In a randomized, controlled clinical trial of external *qigong*, practiced for either 5 or 6 sessions in 3 weeks or sham treatments by 112 adults with OA, pain reduction and improved functionality appeared to be healer-dependent.¹⁹

Bone-Mineral Density

A randomized clinical trial of the effects of 12 weeks of training in a form of *qigong* for bone-loss prevention in middle-age women resulted in maintenance of BMD and reduced interleukin-6 (IL-6) in an experimental group ($n = 44$), compared with a control group ($n = 43$). The researchers concluded that *qigong* can help prevent bone loss in this population.²⁰

Balance

A randomized controlled study examined the mechanisms by which *qigong* and *t'ai chi* are believed to produce positive effects on functional balance. The 49 healthy adults were randomized to participate in *t'ai chi/qigong* instruction for 3 sessions of 1 hour per week for 6 months or to a wait-list control group. At 2- and 6-month follow-ups, the trained group had improved use of sensory and biomechanical balance mechanisms. Vestibular input and wider stances were identified as mechanisms by which such training can improve balance in older adults.²¹

Weight-Loss Maintenance

A controlled trial investigated two mind-body interventions for weight-loss maintenance. Overweight and obese patients ($n = 92$) were randomized to three weight-loss maintenance interventions for 10 hours over 12 weeks: *qigong*; acupressure (Tapas Acupressure Technique [TAT,TM Tapas Fleming, L.Ac.]); or a self-directed behavioral support group. At the 24-week follow-up, the acupressure group maintained greater weight loss than either the *qigong* or support-group participants. Follow-up interviews with participants indicated that some found *qigong* too difficult to practice. There were no adverse study-related effects.²²

Cancer Treatment

In a pilot study of 30 patients who had either completed or were undergoing standard care (chemotherapy) or standard care plus 8 weeks of *qigong* for heterogeneous cancers, the ex-

*The anterior cingulate cortex, or anterior cortex, is active in a wide variety of sympathetic cognitive and emotional functions. The thalamus relays sensory impulses to and from the cerebral cortex, and the cerebellum is involved with muscle coordination and maintaining bodily equilibrium.

perimental group had clinically significant improvements in global quality-of-life (QoL) scores and reductions in disease symptoms, treatment side-effects, and C-reactive protein (CRP), an inflammation biomarker. The differences were not

Two of nine controlled clinical trials suggested that qigong may prolong the life of patients with cancer.

statistically significant between the groups, however, probably as a result of the small sample size.² In a systematic review of the research literature evaluating *qigong* as an adjunct therapy in cancer care, two of nine controlled clinical trials suggested that this mind–body exercise may prolong the life of patients with cancer.²³

Psychologic Conditions

It has been suggested that *qigong*, as a therapy involving components of mind, body, and breath regulation, has potential as a nonpharmacologic modality for treating such psychologic conditions as anxiety disorders to achieve biopsychosocial health.²⁴

Comparing 30 minutes of *qigong* practice with 60 minutes of *qigong* practice, a randomized crossover study of 41 people who regularly practice *qigong* found that 30 minutes of practice was sufficient to provide positive psychologic benefits of the same magnitude as practice of longer duration. These results were evident on measures of mood, anxiety, and perceived pleasure.²⁵ A study of leisure-time, lay *qigong* practitioners showed that those who adhered to a regular *qigong* regimen were more intrinsically motivated with greater concentration and less stress while practicing *qigong* than those who did not adhere to a regular routine.²⁶

Clinical depression—which is common in elderly patients with chronic health problems and reduced psychosocial resources—has been alleviated by forms of exercise, including a simple form of *qigong* known as the Eight-Section Brocades.²⁷ In a randomized study of 82 elderly patients diagnosed with depression, those assigned to participate in a 16-week period of *qigong* practice had improvements in mood; self-efficacy; well-being; and physical, social, and daily task domains of self-concept, compared with control patients who were in a newspaper-reading group. All of these results, except for the last item, were achieved after the first 8 weeks of *qigong* practice.²⁸ However, the underlying neurobiologic mechanisms of *qigong*'s antidepressive effects remain unclear.²⁹ In a study of stress reduction in hospital staff members, perceived stress and related pain intensity were significantly reduced in staff members who were randomly assigned to 6 weeks of *qigong* practice ($n = 16$), compared with wait-list controls ($n = 21$).³⁰ Case studies and a review of the literature on post-traumatic stress disorder (PTSD) support incorporating *qigong* (and *t'ai chi*) into treatment for survivors of refugee trauma and torture.³¹

Immune Functioning

To determine whether 5 months of a moderate course of *t'ai chi* and *qigong* practice could improve immune-system function, the immune responses of 50 older adults to influenza vaccine (for influenza A strains) were measured at 3, 6, and 20 weeks postvaccination. Findings indicated that there was a significant increase in the magnitude and duration of the protective antibody response (anti-influenza hemagglutination inhibition titers in blood samples) in the *t'ai chi/qigong* group, compared with the control group.³² In addition, a meta-analysis of 26 randomized controlled trials from 1997 to 2006 investigating psychophysiologic outcomes of *qigong* in chronic health conditions found that *qigong* produced an increase in number of white blood cells and lymphocytes.³³

Chronic Fatigue and Sleep

TCM practitioners regard chronic fatigue as reflecting a disharmony and depletion of the body's *qi*. In an uncontrolled pilot study, 18 females who were taught a *qigong* routine during weekly classes over 6 months, were asked to practice it daily for 15 minutes, and were instructed to keep a sleep diary during the 2-week baseline control period and at 3- and 6-months follow-up. *Qigong* improved such factors related to chronic fatigue as sleep, pain, mental attitude, and general mobility.³⁴ While *qigong* did not alter serum cytokines after 1 month of practice, it did enhance sleep duration and other indicators of psychologic well-being.³⁵

Other Medical Conditions

There is evidence suggesting that *qigong* is beneficial for detoxification of patients who are addicted to heroin,³⁶ and for treating patients who have salivary hyposalivation.³⁷ During an outbreak in Hong Kong of severe acute respiratory syndrome (SARS), *qigong* helped patients regain a sense of control over their health and security while being treated for a condition that they were blamed for spreading.³⁸

Currently Active Clinical Trials on *Qigong*

- Presurgical *qigong* therapy for women with breast cancer
- *Qigong* versus aerobic exercise for treating childhood chronic musculoskeletal pain
- Effects of *qigong*, *t'ai chi*, and yoga practice in healthy older adults
- Effects of a complementary multidisciplinary program, including *qigong*, on blood pressure in patients with hypertension
- Exploring integrative medicine (including *qigong*) in Swedish primary care*

Source: Ref. 5.

*This study is listed with the ClinicalTrials.gov identifier: NCT00565942; and is in collaboration with a Swedish institution.

Resources

Organizations

Institute of Integral Qigong and Tai Chi (IIQTC)

5276 Hollister Avenue, Suite 257
Santa Barbara, CA 93111
Phone: (805) 617-3390
E-mail: info@instituteofintegralqigongandtaichi.org
Website: www.instituteofintegralqigongandtaichi.org

IIQTC makes accessible to Americans these ancient self-care traditions through education and training of community-based certified instructors.

International Qigong Alliance (IQA)

P. O. Box 750
Ely, MT 55731
Phone: (218) 365-6330
Fax: (218) 365-6933
E-mail: info@qigongalliance.org
Website: www.qigong-alliance.org

The IQA is a nonprofit global network of *qigong* practitioners, instructors, and schools dedicated to promoting the healing benefits of *qigong* and other forms of subtle energy work.

National Qigong Association USA (NQA)

P. O. Box 270065
St. Paul, MN 55127
Phone: (888) 815-1893
Website: www.nqa.org

The NQA serves as a network to enhance quality of life (QoL) through *qigong* and support scientific research on its benefits.

Qigong Institute

617 Hawthorne Avenue
Los Altos, CA 94024
Website: www.qigonginstitute.org

The Institute promotes *qigong* and other forms of energy medicine through research, education, conferences, classes, and maintenance of the Qigong and Energy Medicine Database, which can be accessed on the Institute's website (www.qigonginstitute.org/html/database.php).

Recommended reading for you and your patients

The Way of Qigong:

The Art and Science of Chinese Energy Healing
By Kenneth Cohen
New York: Ballantine, 1999

Women's Qigong for Health and Longevity:

A Practical Guide for Women Forty and Older
By Deborah Davis, L.Ac., M.A.O.M.
Boston: Shambhala, 2008

Heal Yourself with Qigong

By Suzanne Friedman, L.Ac., D.M.Q. [Chinese doctorate in medical *qigong* therapy]
Oakland, CA: New Harbinger Books, 2009

Overall Functioning

The aforementioned meta-analysis of 26 randomized controlled trials from 1997 to 2006 found that, in addition to increasing the number of white blood cells and lymphocytes, *qigong* lowered total cholesterol, systolic and diastolic BP, and depressive mood scores. The reviewers therefore advocated *qigong* as an adjunctive therapy for older persons with chronic conditions.³³

Another systematic review of 36 research reports of *qigong* and *t'ai chi*, involving a total of 3799 participants ages 55 and older, likewise, identified significant improvements in physical function and BP, as well as reductions in fall risk, depression, and anxiety.³⁹

A matched-sample quasiexperimental study design found *qigong* to be an appropriate therapy for middle-age women (average age = 50). The women assigned to participate in an 8-week *qigong* program (n = 37) scored significantly better on physiologic measures—including muscular endurance and body composition—but not on bone strength, than the control group did.⁴⁰ A case report of a subject who had practiced *qigong* for 50 years described the patient's resting electroencephalographic (EEG) pattern as having changed over time, with frontally-dominant α -1 waves becoming more prominent than occipitally dominant α -2 waves. The clinical significance of this physiologic change needs to be explored.⁴¹

Pediatric Populations

Children with fibromyalgia (n = 30, ages 8–18) were randomly assigned to receive 12 weeks of 3 weekly training sessions of either *qigong* or aerobic exercise. Both groups tolerated a moderate regimen without exacerbation of their fibromyalgia. The children also had significant reductions in symptoms (including pain) and had improvements in physical function and QoL.⁴²

The Qigong Sensory Training program, which combines *qigong* with massage for treating young children on the autism spectrum, was developed by a TCM doctor. In a pilot study involving 15 professionals and 26 children, an intervention with the staff trained in this modality produced positive outcomes on standardized tests of sensory impairment—a major feature of autism—and adaptive behavior.⁴³

The effects of 20 minutes of *qigong* lessons at least twice weekly over a period of 6 months was evaluated for students in two second-grade and two eighth-grade classes (40 elementary-school students and 50 high-school students). Integration of *qigong* training into the curriculum was feasible, and the schoolchildren who received *qigong* lessons also had improved grades and behavior, compared with control classes (as rated by teachers and parents).⁴⁴

Conclusion

Like *t'ai chi*, *qigong* is a safe, cost-effective form of practice suitable for a wide range of adult and pediatric patient populations. Promising results have been shown in clinical trials for addressing several conditions, including cardiovascular health, metabolic syndrome, pain, and psychologic disorders, as well as for promoting overall well-being. Further randomized, controlled research trials are therefore warranted to confirm these positive outcomes. The finding that 30 minutes of *qigong* practice produces comparable positive psychologic effects to practice of longer duration should be reassuring to health practitioners of the benefits of even shorter *qigong* regimens, which are likely to produce greater patient adherence. ■

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