



# Tai Chi

## (Taiji, Taijiquan)

YUZENG LIU

THERESA M. MORGAN

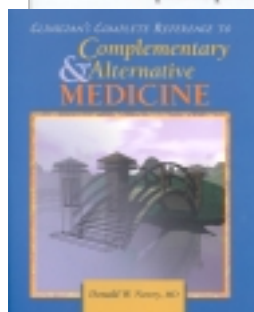
### Origins and History

Tai Chi is referred to by many names, including Taiji and Taijiquan. For consistency, Tai Chi is used throughout this discussion. Tai Chi originated in what is now the People's Republic of China. According to legend, Zhang Sanfeng (ca. 1550-1600 CE), a hermit living in the Wudang mountains, created the 13 basic postures. Wang Zongyue wrote down these postures in *Treatise on Taijiquan*. The postures are based on a combination of the four directions and the four corners—south (ward off), north (roll back), west (press), east (push), southeast (elbow), northwest (shoulder), southwest (pull down), northeast (split)—and five elements: metal (entering), wood (leaving), water (look left), fire (look right), and earth (centering). Each element also contains the element of earth (centering).

Many forms and styles of Tai Chi have developed from the original 13 postures. Forms differ in their application of principles and in the practice of movements. There are traditional forms such as Wudang Tai Chi and modern forms such as the 24-step short form. Traditional family forms include Chen, Yang, Wu, Sun, Wuhao, Ching, and others. Elements from the four family styles of Chen, Yang, Wu, and Sun make up the 42-step combined form that is compulsory at international Wushu competitions. Each system and style has unique characteristics and methods for practice. Style variations can be attributed to differences in teaching methods, teachers, and interpretations of the classical principles.

### Mechanism of Action According to Its Own Theory

All Tai Chi systems share certain foundation principles, such as open and close, full and empty, yielding, entering, leaving, continuous and connected movement, to name a few, which clearly distinguish yin and yang. The foundations of Tai Chi are derived from the principle of yin and yang. Yin is the feminine, female, receptive, dark, negative, closed,



empty principle. Yang is the masculine, male, creative, bright, positive, open, full principle. Without both, there is potential but not substance. Wang Zongyue wrote in his "Treatise on Taijiquan," "Yang is not separate from yin; yin is not separate from yang" (available online at [www.wudang.com](http://www.wudang.com)). In movement, the smooth alternation between full and empty creates harmony and balance. Correct Tai Chi practice develops connections, unity, and harmony inside and outside, between the movement and the breathing, the body and the *qi*, the *qi* and the mind, the *qi* and the energy, the energy and the spirit.

Moreover, correct Tai Chi practice especially requires that the heart must be quiet, the attention must be concentrated, and one must understand and pay attention to "using mind, not physical strength." Tai Chi movements require "integrated *qi*." The spirit shines from the eyes and extends through the upper limbs, torso, and lower limbs. The upper and lower body are connected; there should not be the slightest confusion or disorder. Advance and retreat are consistent. The movements of Tai Chi unfold with elegance and composure and are continuous and unbroken. This encourages every part of the body to be relaxed and alert. Tai Chi movements require coordinated and timed breathing, which encourages natural respiration and can strengthen the respiratory system.

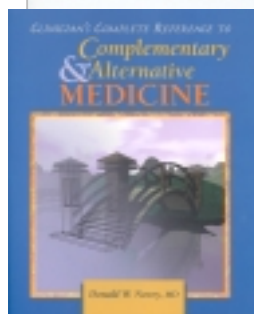
People who regularly practice Tai Chi report that their entire bodies feel comfortable and their spirits are "glowing" and that when two people practice *push hands*, their bodies feel lively and agile. This heightened feeling gives the body's physiologic mechanisms an invigorated sensation, which clearly can strengthen and enhance the efficacy and results of many treatments.

## Biologic Mechanism of Action

The physiologic effects of Tai Chi have been clinically studied in many countries with a great deal of research in China. This contributor has conducted several group studies in China, with results that verify the positive effects of Tai Chi practice on respiratory, cardiovascular, and cerebral functions in both children and older adults. In the United States, a primary focus group for Tai Chi research has been older adults, with significant results. Research shows that regular Tai Chi practice can reduce the incidence of falls in older people by 47%.<sup>1</sup> Tai Chi practice requires consistent movement, round motion, and alignment of the joints throughout the body. During Tai Chi practice, the individual should keep the spinal column upright, sink the chest, relax the elbows, and raise the back. The shape and alignment of the spinal column are important because of the principal roles of the waist and back during movement.

In addition to its ability to increase outer body mass strength, Tai Chi can assist in the treatment of high blood pressure, heart disease, pulmonary tuberculosis, dyspepsia, and ulcers.<sup>2</sup> It is especially beneficial in the treatment of the liver, kidneys, spleen, and stomach. The relaxed and gentle movements of Tai Chi strengthen the body in normal physiologic patterns and encourage regular functioning of the internal organs. Tai Chi has a positive influence on central nervous system functions. It strengthens the heart, blood vessels, and respiratory functions, improves digestive and metabolic processes, and can decrease static blood in the body.<sup>3</sup>

During Tai Chi practice, the contraction-expansion cycle of the musculoskeletal system





can strengthen and calm arterial blood circulation. Respiratory movement also can accelerate the returning flow of blood in the veins. Tai Chi increases chest volume during inhalation and raises internal negative pressure, which consequently reduces venous pressure in the upper and lower cavities and accelerates the return flow in the veins.

The expansion and contraction of the diaphragm and abdominal muscles during Tai Chi practice cause the continuous change in abdominal pressure, which has a beneficial effect on blood circulation. The massaging action of this movement on the liver helps to eliminate static blood and strengthen the liver's function. Respiratory movement also stimulates the stomach and intestinal tract mechanisms and can improve blood circulation in the digestive system. Consequently, it can accelerate digestive functions and prevent constipation, which is a very important consideration for older adults.

Good control and balance are required in Tai Chi, owing to the relative complexity of some movements. The cerebrum is required to be intensely active and complete, thus increasing activity in the central nervous system and strengthening the cerebrum's regulating functions.

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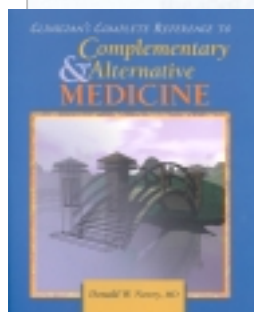
## Forms of Therapy

There are many styles of Tai Chi and many variations within each system. All have the same foundation principles but style practices differ according to the basis for movement and the theory of the individual form. Wudang Tai Chi uses spiraling circular patterns that vary in size and direction. The movements of the form are dynamic and changing and use a wide range of movements. Yang Tai Chi uses lateral circular patterns that maintain a similar size and direction throughout the form. The movements of the form are regular and elegant, with a quiet strength and hidden potential. Wu Tai Chi uses small intricate circles and smooth flowing motions that require fine muscle control. The movements of the form are deceptive and close and use vertical patterns. Chen Tai Chi uses a spiral pattern that sometimes is combined with an explosive release of energy. The movements of the form employ a characteristic *silk-reeling* pattern. Wuhaio Tai Chi is similar in dynamic to Chen Tai Chi but uses compact, close circles performed with a characteristic "start-connect-open-close" pattern. Sun Tai Chi has small circles that open and close. The movements have a distinct rolling motion and subtle changes in direction.

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## Demographics

The majority of those who practice and teach Tai Chi in the United States are adults. Although there are some children who practice, they are a very small minority. People who practiced other martial arts as teenagers and young adults often later adopt Tai Chi. In China, older adults (age 50 to 80 years) make up a large proportion of those practicing; in the U.S., the majority of those practicing are between 30 and 60 years of age. A greater number of Tai Chi practitioners and teachers are located in larger cities. As more people have demonstrated the health benefits of Tai Chi practice, many hospital wellness clinics and seniors groups have begun Tai Chi programs.



## Indications and Reasons for Referral

Tai Chi practice can help decrease the side effects of arthritis, osteoporosis, balance disorders, arteriosclerosis, heart disease, high and low blood pressure, gastrointestinal problems, stress-related disorders, depression, and other disorders of the nervous system. By increasing the body's resistance to disease, Tai Chi practice can preserve health. As a preventive therapy, Tai Chi can help reduce susceptibility to infectious disease by strengthening the body's natural homeostatic mechanisms, which benefits individuals with AIDS or a weakened immune system.

Tai Chi practice strengthens the sense of equilibrium and musculoskeletal system functioning, thereby reducing the incidence of falls and broken bones in older adults. For underweight individuals, Tai Chi practice can help stimulate the appetite and increase muscle mass. For overweight individuals, Tai Chi can help increase the sense of well-being during exercise and reduce the postpractice intake of superfluous calories because of anxiety or punishment/reward syndromes, as well as burn fat and improve muscle tone. Because Tai Chi requires quiet, continuous, circular, complete, and connected movements, it may be practiced by individuals that require some physical activity but cannot engage in strenuous exercises.

Regular Tai Chi practice helps regulate the respiratory organs, increases lung capacity, and calms the respiratory patterns, making it an effective therapy for asthma, chronic respiratory distress, anxiety, and shortness of breath. It could be an effective therapy for individuals who wish to quit smoking. The continuous motion and diaphragmatic breathing can provide an internal massage for the stomach, kidneys, liver, spleen, small and large intestines, and the cardiopulmonary organs. Tai Chi improves and helps maintain functioning by stimulating blood flow to these organs. Tai Chi practice helps regulate and enhance the central nervous system functions, which in turn regulate and govern stress response, mental health, cardiovascular functions, and other vital physiologic functions.

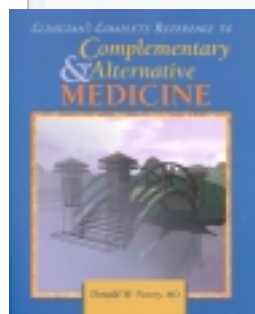
## Office Applications

Tai Chi practice can preserve the natural alignment of the spinal column and flexibility in all joints, which makes it an effective adjunctive treatment for rheumatoid arthritis, gout, back pain, and osteoporosis.

During Tai Chi practice the body must be straight and erect and the *qi* must sink down. This is known as "sinking the *qi* to the *dan tian*" and is one type of diaphragm breathing. The expansion and contraction of the diaphragm and abdominal muscles cause the abdominal pressure to continually change and provide a massaging action for the internal organs, thus stimulating their functions. This can alleviate constipation, gastrointestinal disorders, gastritis, and irritable bowel syndrome, and can aid in postpartum care.

Regular Tai Chi practice can keep the heart and coronary arteries' blood supply in the best condition, maintain the strength of the heart systole, and strengthen blood movement and the cardiovascular processes. It is an excellent therapy for heart disease, hypertension, menstrual cramps, menorrhagia, and impotence.

Tai Chi exercises can strengthen the functions of the central nervous system. Because





the heart must be quiet, the attention must be concentrated, and one must understand and pay attention to "using mind, not using physical strength," the cerebrum is required to be intensely active and complete, thus increasing central nervous system activity and strengthening the cerebrum's regulating functions. This makes Tai Chi an excellent therapy for stress, mental health, chronic fatigue syndrome, obesity and weight management, sleep apnea, and chronic pain.

Tai Chi's well-distributed respiration, abdominal muscle, and diaphragm activity can regulate and control abdominal pressure, increasing the rate of blood flow and lung tissue functioning, thereby preserving lung elasticity and preventing weak bones and ossification. This makes it an excellent therapy for bronchitis, emphysema, and sinusitis. It can also be effective in the treatment of asthma, hay fever, lung cancer, and respiratory infections.

The following list presents a simple ranking of conditions responsive to Tai Chi treatments. As with all alternative therapies, Tai Chi does not preclude the additional use of mainstream medicine in addition.

*Top level: A therapy ideally suited for these conditions*

Back pain; bronchitis; chronic pain; constipation; emphysema; female health; gastrointestinal disorders; gout; heart disease; hypertension; male health; mental health; postpartum care; rheumatoid arthritis; sleep apnea; and sinusitis

*Second level: One of the better therapies for these conditions*

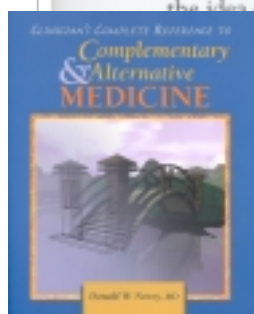
Asthma; arthritis; gastritis; headaches; impotence; irritable bowel syndrome; menstrual cramps; osteoporosis; pneumonia; sleep disorders; stomachache; and ulcers

*Third level: A valuable adjunctive therapy for these conditions*

Colds and flu syndromes and diarrhea

## Practical Applications

The benefits of Tai Chi are derived from the correct practice of a linked set of movements. The person first must learn the correct movements, then apply this knowledge in practice. A physician may become familiar with reputable teachers in the area for referral. The physician could learn Tai Chi and then select elements of the forms for use in a physical therapy session. For example, the practice exercise *Wave Hands Like Clouds* works the entire body and helps to align the spinal column, open the hip joints, free the waist, provide flexibility in the upper back, and open the shoulders. Its rhythmic patterns adhere to basic Tai Chi principles, so there is also an excellent massage and stimulation for the internal organs. It can be performed in a limited space as it only requires room for standing. The rudiments of the exercise can be learned in 1 hour but require years for refinement. The foundation principles of Tai Chi can be applied to relationships and situations in our lives and promote balance and harmony. The inner peacefulness that is part of Tai Chi training—the idea of calm and tranquility—can be applied with positive therapeutic effects.



## Research Base

### Evidence Based

Studies have been conducted on the effectiveness of Tai Chi as a treatment for ailments which commonly affect older adults and as a preventive practice to reduce the rate of deterioration.<sup>4</sup> Evidence shows that Tai Chi is an effective treatment for many cardiovascular ailments, including heart disease, arteriosclerosis, skeletal deterioration, and fractures due to falls.<sup>4,5</sup> Tai Chi is also effective in improving intellectual functions in children.<sup>6</sup> In addition to its physiologic effectiveness, individuals that practice Tai Chi report an increased sense of well-being and a willingness to continue with an exercise program.<sup>7</sup>

### Basic Science

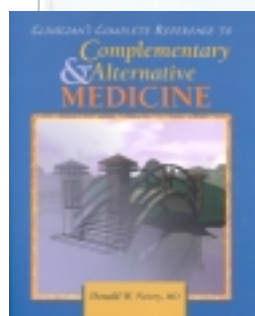
A 12-month study evaluated cardiopulmonary function, strength, flexibility, and body fat percentage.<sup>2</sup> The Tai Chi group had an average increase of 18.7% in VO<sub>2</sub>max ( $P < 0.01$ ), an increase of 9.9% in thoracic/lumbar flexibility ( $P < 0.05$ ), and an increase of 19.2% in muscle strength of the knee extensor. The control group showed no significant change in these variables.

A group of 34 older adults that regularly practiced Tai Chi were compared with a group of 56 older adults that did not practice Tai Chi.<sup>3</sup> The occurrence of spinal deformities in the Tai Chi group was only 25.8%, compared to 47.2% in the control group. Those who regularly practiced Tai Chi also had a better range of movement in the spinal column. In the Tai Chi group, 77.4% could bend forward at the waist and touch the floor with their hands, compared to 16.6% in the control group. The incidence of bone density loss was lower (36.6% compared with 63.8% in the control group). In the Tai Chi group, average blood pressure was 134.1/80.8, compared to 154.5/82.7 in the control group. The arteriosclerosis rate in the Tai Chi group was 39.5%, compared to 46.4% in the control group.

In another study, 45 primary school children with an average age of 11.5 years, practiced Tai Chi for 30 minutes twice a day for 4 months.<sup>7</sup> They were compared with a group of 30 children with an average age of 11.9 years. The children in the Tai Chi group showed marked improvements in memory, calculation skill, and concentration, reflected in improved scores on standard tests.

### Risk and Safety

Tai Chi is safe for everyone. Because Tai Chi works in harmony with the body, anyone can practice it. The range of movement applied depends on the person, not on any external requirement. Injuries among solo Tai Chi practitioners are quite rare but are more common among *push hands* practitioners. This is natural. Studies have focused on the benefits of Tai Chi practice because, unlike pharmacologically active agents or other therapies, Tai Chi practitioners have not reported adverse effects. Some beginners report a slight burning sensation in the knee area that disappears with the increase in muscle strength. Tai Chi can be compared to many movement arts. The relative risk and safety depend on the extent of the movement, the strength with which it is performed, and whether the person has prepared the body for the movement.





### Efficacy

China's Exercise Medicine Research Institute studied 100 people between the ages of 50 and 90 years.<sup>3</sup> Thirty-four people practiced Tai Chi regularly and 56 did not. According to the evidence observed, the cardiovascular system functions, metabolism, and skeletal matter of the Tai Chi group, regardless of their individual physique, were better than that of the control group.

Steven L. Wolf and colleagues at Emory University School of Medicine found that older adults enrolled in a 15-week Tai Chi program reduced their risk of falling by 47.5 percent.<sup>4</sup> Another study by Leslie Wolfson and colleagues at the University of Connecticut studied the effectiveness of several interventions to improve balance and strength among older adults. These improvements, particularly in strength, were preserved over a 6-month period in Tai Chi exercise.<sup>5</sup>

### Future Research Opportunities and Priorities

Many published studies focus on one or two particular aspects of practice. Although this is a generally accepted practice and yields good results, it would be quite useful to have a comprehensive study that would include a Tai Chi group, a group practicing another type of exercise, and a sedentary control group. Both physiologic and psychologic factors should be included, as well as participant logs. Another useful focus would be in the area of cardiovascular health, specifically circulatory problems, heart disease, and hypertension brought on by stress-related conditions. An interesting investigation would be to compare Tai Chi and a standard aerobic routine for respiratory and cardiac functions, overall muscle tone, and flexibility.

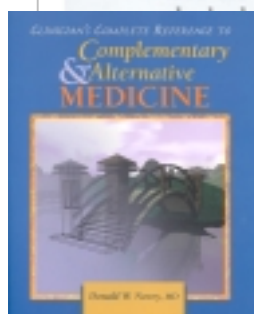
## Druglike Information

### Safety

Tai Chi can be practiced by anyone, regardless of age. As with any movement therapy, safe practice relies on common sense. Correct body alignment is essential, not only in performing Tai Chi movements correctly, but also in preventing injuries. For example, Tai Chi movements require bending the knees. Correct toe alignment is critical to the prevention of knee injuries. If an individual is too full or too hungry, too sad or too happy, too anxious or too angry, too tired or too upset, it is not a good time to practice the full movements. The individual should practice more slowly, which can help balance the condition.

### Actions and Pharmacokinetics

Tai Chi movements provide a gentle massaging action for the internal organs, stimulate the cerebrum and central nervous system, and help regulate both the cardiovascular and respiratory systems. The overall practice works to stimulate and enhance natural homeostatic functions and can aid in the elimination of toxic substances from



### Research *Warnings, Contraindications, and Precautions*

Most contraindications for Tai Chi relate to the way exercises are practiced, not to the practice itself. This has to do with the extent of movement, the relative strength applied, and the ability of the practitioner to sustain movements over time. Common sense should prevail. People who are recovering from an illness should practice slowly and rest after 2 or 3 minutes. Individuals with lower back problems should practice higher stances to open the hips and release the spine.

### *Drug Interactions*

Tai Chi may enhance the effects of medications due to its stimulating effects on the body's systems, but it has no other interactions. The results of Tai Chi practice can be diminished by drugs that inhibit cerebral, central nervous system, or muscle functions.

### *Adverse Reactions*

Muscle strain can occur because of overexertion, excessive force, or misalignment of the body during practice. Complaints of knee strain are common until the person learns to use and strengthens the correct muscles in the legs. Complaints of lower back discomfort also are common because Tai Chi requires use of the legs. This discomfort usually occurs from incorrect spine-hip alignment, locked hips, uneven weight distribution through the legs, and failure to use the abdominal muscles to support the torso.

### *Pregnancy and Lactation*

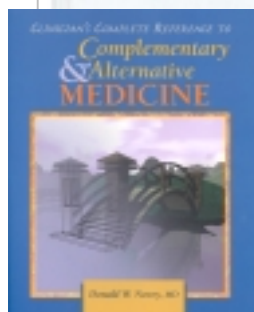
Tai Chi can be safely practiced during pregnancy although the extent of some movements may be limited by term. Its relaxed, gentle, flowing motion and internal massaging action can have the same calming and stimulating effect on the fetus as it has on the mother's internal organs. After delivery, Tai Chi can help stimulate and increase lactation by calming the mother's central nervous system.

### *Trade Products, Administration, and Dosage*

All Tai Chi systems have beneficial effects; the best Tai Chi is that which is correctly practiced. The choice of system or style may depend on the available teacher or personal preference, according to the type of movement and the knowledge level of the teacher.

Traditionally, the best time to practice Tai Chi is early in the morning, when yang energy is rising. As a general rule, one should not practice between the hours of 11:00 and 1:00, whether morning or night. During these times, yang and yin energies are at their strongest and practice can create an imbalance in the body's natural yang and yin energies. However, certain imbalance conditions can be treated by practice during these times.

Practice duration can be as short as 5 minutes or as long as several hours, depending on the person's circumstances. A short Tai Chi form can be completed once in approximately 3 to 5 minutes; a long form may take 15 to 30 minutes or more, depending on the rate of speed of the movements. Regular practice is essential to achieve the benefits of Tai Chi.





Daily practice is highly encouraged, but it is fine to set a regular schedule of 2 or 3 days per week.

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## Self-Help versus Professional

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Some people try to learn Tai Chi from a videotape or book. A major problem with either of these methods is that neither a video nor a book can tell the person whether a movement is being practiced correctly. Videotapes and books have a very limited ability to communicate the timing, character, and quality of a movement. Although some movements may be learned from these sources, essential aspects of the practice are not addressed. It is not usually dangerous to learn in this way, but it is definitely incomplete.

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## Visiting a Professional

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Typically a person joins a Tai Chi class. If the class emphasizes the physical aspects, the mood of the class should be upbeat with a high level of concentration. If the emphasis is on the internal aspects, the mood should be quiet and intense. Outside disturbances should not distract the participants. Some instructors use music to help students with timing and to enhance the character of the movements. Everyone in the class should be moving at the same speed at the same time with the same quality of movement. The whole room is focused on one thing and one time: the present. Everyone is concentrating on the small nuances of each movement and connecting the whole with the parts. Everyone moves together as one body, just as the parts should all move together within each person. A harmonious spirit and energy fills the room. There is a sense of mindfulness and presence about each movement, yet each movement seems effortless and natural. After practice, the feeling of rhythm and harmony remains; a soft but strong quality radiates from the body. The eyes are bright and the breathing is deep and regular. The whole body is comfortable and refreshed.

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## Credentialing

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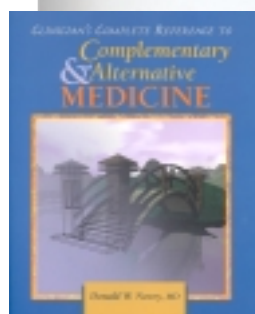
There is no national agency for licensing or credentialing in the U.S. In general, peer review and recognition determine whether a given practitioner is competent.

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## Training

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Training is a lifelong endeavor. Individual schools and international organizations may issue training completion or teaching authorization certificates. The President's Council on Fitness offers a participation award for sports activities, including Tai Chi, based on regular participation. However, there are no nationally recognized agencies that issue credentials or certificates for training in Tai Chi.



A person's level of competence is measured subjectively by demonstration and observation. The training evaluations are the same as for individual progress. Evaluations are generally performed by the teacher, although various seminars and competitive events offer an opportunity to obtain evaluations from other recognized experts.

## What to Look for in a Provider

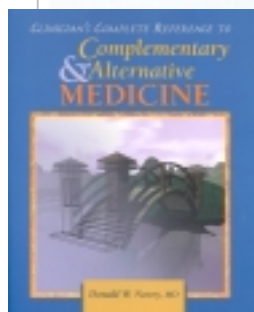
A provider should offer referral services or should be a teacher available for study. A teacher should have a sufficient understanding of Tai Chi practice and philosophy as well as some knowledge of general movement theory and basic human anatomy. As a general rule of thumb, a qualified teacher should have had at least 3 to 5 years of previous or current study with a master before teaching independently. The provider should have a sufficient understanding of form theory to explain key principles, be able to explain the differing requirements at each level of practice, and be able to demonstrate correct, coordinated (inside and outside), and full Tai Chi movements. The types of internal practice vary, but the ability to combine at will movement with internal energies is essential in all Tai Chi systems. The provider should have at least a basic understanding of Tai Chi history and a clear knowledge of the lineage of the style or system being taught.

## Barriers and Key Issues

Language and the differences in Western and Eastern conceptualizations of physiologic mechanisms are the two greatest barriers to the widespread acceptance of Tai Chi in the U.S. The problems of conceptualization are compounded by the variations in translation of Chinese characters (*taijiquan* or *t'ai chi ch'uan*; *qigong* or *chi kung*). Despite these difficulties, there has been a great deal of clinical evidence collected on the benefits of Tai Chi practice. The increased availability of clinical information in English would help foster an understanding of Tai Chi in terms of physiologic mechanisms that would in turn increase its acceptance as an effective therapy. The cultural and language difficulties are exacerbated by the promotion of misconceptions in various media, incomplete knowledge on the part of some instructors, and misunderstanding of basic Tai Chi principles. Since there are no regulatory or licensing agencies, it is difficult to determine whether a provider is qualified. Reference and background checks can help determine qualification.

## Associations

Tai Chi associations are as varied as the styles and systems. There is no governing body for all Tai Chi practitioners, nor is there any regulation of associations in the U.S. Although there are national associations in the Chinese martial arts that include Tai Chi members, most Tai Chi associations are governed by the head of a particular style, system, or school.





## Suggested Reading

1. Jou TH: *The tao of t'ai chi ch'uan: way to rejuvenation*, Rutland, Vt, 1980, Charles E. Tuttle.  
This comprehensive book on Tai Chi includes history, drawings, translations, and commentaries from the classics. The genealogic tables are excellent as well as the complete, step-by-step illustrations of three forms (Yang, Chen, Wu). The discussions are complex and introduce classic concepts.
2. Kaptchuk T: *The web that has no weaver: understanding Chinese medicine*, Chicago, 1983, Congdon and Weed.  
The author's purpose is to bridge the cultural gaps between Chinese and Western medicine. As a Western-trained physician, he presents Chinese medicine from the Western point of view and provides both insight and connection.
3. Veith I, *The yellow emperor's classic of internal medicine (Huangdi Neijing Shuwen)*, Berkely, 1949, University of California Press.  
This book is an excellent translation of one of the earliest (ca. 2697-2597 BCE) and most important texts on Chinese medicine, theories, and practices. It details the foundation principles that have guided many centuries of practice and research in traditional Chinese medicine. Background material is provided by the translator.
4. Wile D: *Lost tai chi classics of the late Ching dynasty*, Albany, 1996, State University of New York Press.  
This book provides the four major classic works with translations, extensive notes, and charts, as well as background material and the original Chinese texts. The author also provided an excellent translation in *T'ai Chi Touchstones: Yang Family Secret Transmissions* (Brooklyn, Sweet Chi Press, 1983).

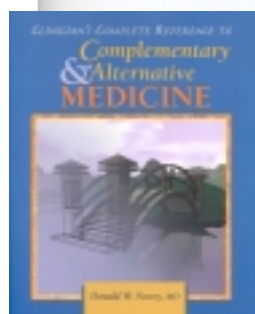
## Internet Links

There are a vast number of resources on the Internet that pertain to Tai Chi. The following are some of the better websites and should allow the reader to browse a variety of interest areas.

- [www.chebucto.ns.ca/Philosophy/Taichi/other](http://www.chebucto.ns.ca/Philosophy/Taichi/other)
- [www.nih.gov/nia/new/press/taichi](http://www.nih.gov/nia/new/press/taichi)
- [www.mtsu.edu/~jpurcell/taichi/tc-links](http://www.mtsu.edu/~jpurcell/taichi/tc-links)
- [www.wudang.com](http://www.wudang.com)
- [www.sunflower.singnet.com.sg/~limttk/index](http://www.sunflower.singnet.com.sg/~limttk/index)

## Magazines

1. *Tai Chi* [www.tai-chi.com/magazine](http://www.tai-chi.com/magazine)  
*Tai Chi* is a very good print resource with a catalog of tapes and directory of providers.
2. *Journal of Asian Martial Arts*  
The *Journal of Asian Martial Arts* is much more scholarly than the others. It is published quarterly and frequently has articles on Tai Chi and Qigong, as well as a directory of providers.



### 3. Qigong and Kung Fu

Qigong and Kung Fu covers the U.S. and international tournament circuits and has many good articles by national instructors. It is a good contact point as it includes lists of providers, seminars, workshops, and other resources.

### 4. Shaolin and Taiji (in Chinese)

Qi Journal also carries articles on Tai Chi but focuses more on Qigong. It also provides a directory of providers. It is only available in the Chinese language.

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2. Lan C et al: 12-month tai chi training in the elderly: its effect on health fitness, *Med Sci Sports Exer* 30(3):345-351, 1998.
3. Liu Y: Comparison study of 100 people, 50-90 years old, China Sports Medical Research Institute, 1994.
4. Lai JS et al: Two-year trends in cardiorespiratory function among older tai chi chuan practitioners and sedentary subjects, *J Am Geriatr Soc* 43(11):1222-1227, 1995.
5. Kessenich CR: Tai chi as a method of fall prevention in the elderly, *Orthoped Nurs* 17(4):27-29, 1998.
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