YANG TAIJI PRACTICE THROUGH THE EYES OF WESTERN MEDICAL HEALTH GUIDELINES

by Michael A. DeMarco, M.A.

Originally published in the Journal of Asian Martial Arts • Volume 7 Number 4 • 1998

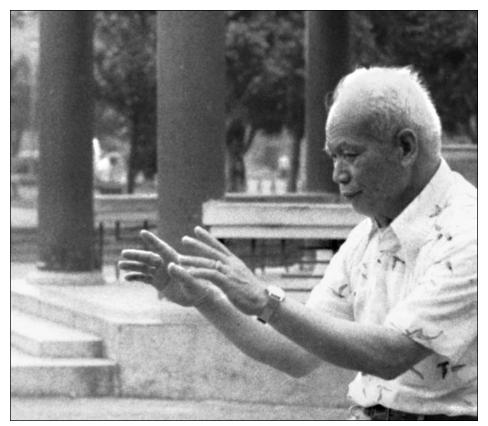
Digital Edition © 2010



All Rights Reserved by Via Media Publishing Company

No part of this file may be reproduced in any manner whatsoever without written permission form the publisher, except by writers who may quote brief passages to be printed for review or reference. Kindly write to the publisher concerning requests to make use of any of the materials published in this files, or contact the authors directly.

Via Media Publishing • 941 Calle Mejia #822, Santa Fe, NM 87501 USA www.journalofasianmartialarts.com



YANG QINGYU LIVES IN PULI, TAIWAN, WHERE HE TEACHES THE TRADITIONAL YANG TAIJI SYSTEM.



Photographs courtesy of M. DeMarco.

Lin Shengxuan is one of Yang Qingyu's longtime students from Taipei. During a visit to Erie, Pennsylvania (April 1998), Mr. Lin taught my students a repetitive drill based on the "grasp sparrow's tail" sequence which included alternating sides. Students, left to right: Willard Hicks, Brian Nick, George Benardini, Michele Vukcevich, Dave Wayman, Rita Panciera, Patricia Whalen, Rose Popeski, & Janet Mattes.

YANG TAIJI PRACTICE

THROUGH THE EYES OF WESTERN MEDICAL HEALTH GUIDELINES

MICHAEL A. DEMARCO, M.A.



Introduction*

According to Chinese consumer packaging labels and research reports—green tea, beer, peanuts, qigong, acupuncture, taijiquan, and "Long Life" brand cigarettes—all have a strong commonality. Each promises the benefits of greater strength and vigor, improvement in mental faculties, deeper spiritual awareness, and (of course) increased sexual prowess. In short, many Chinese exercise and dietary programs claim to offer a healthy, happy life with the longevity of the pine, tortoise and crane.

The tendency of the Chinese to claim such benefits from so many of their products and activities raises valid questions concerning their acceptability as being truly conducive assets for a healthier lifestyle. This paper will focus on the unique art of Yang Style Taijiquan (t'ai chi ch'üan), usually referred to in abbreviated form simply as taiji. During the last few decades, there has been a rapid growth in taiji practice outside Asia, a growth largely linked to claims concerning its health nurturing qualities (Baer, 1997). To verify these claims, this paper will utilize the most recent health and fitness guidelines provided by leading research institutes. These guidelines can serve as criteria for analyzing and assessing Yang Style Taiji as an activity that we may consider in our research concerning the relationship between lifestyle and well-being. Therefore, this paper:

- 1) defines and lists the established guidelines for health and fitness;
- 2) describes what taiji is and how it is practiced; and
- 3) ascertains the role taiji may take in our lives according to the ideals set by the world's leading authorities on health and fitness.

* This paper was prepared for presentation at the International Council for Health, Physical Education, Recreation, Sport & Dance (ICHPER•SD)

8th European Congress
July 14-19, 1998
London, England

GUIDELINES FOR HEALTH AND FITNESS

According to the World Health Organization, "Health is defined as a state of complete physical, mental, social, and spiritual well-being, and not merely the absence of disease and infirmity." Dr. Nieman adds that "Physical fitness is a condition in which an individual has sufficient energy and vitality to accomplish daily tasks and active recreational pursuits without undue fatigue" (1998:4).

A review was made of some of the published literature that focuses on the subject of health and physical fitness. The general guidelines derived from these works permit practical, clear-cut conclusions helpful in the assessment of any exercise program, including taiji. A synopsis of their findings is given in the following eight guidelines for a successful approach to adopting and maintaining a physically active lifestyle (U.S., 1996:46, 47; Nieman, 1998:17):

- 1) Be active!
- 2) exercise at least 30-minutes daily (this can be accumulated time);
- 3) participate in an exercise program of moderate intensity;
- 4) consider behavioral and attitudinal factors in selecting a program;
- 5) have support from family and friends;
- 6) select an activity open to males and females of varied ages, which has appeal to all;
- 7) eliminate "high-risk" behaviors;
- 8) select an activity that can be done life long.

The importance of these eight guidelines are obscured by their simplicity. A closer look at the meaning of each guideline and how they interrelate with each other represents an enormous amount of medical knowledge in a concise format. Therefore, we should not dismiss the guidelines because of their simplicity but come to understand the implications of each and their importance in our lives.

The rational for adopting the above guidelines, including the social and medical factors influencing such a decision, will be described after the following section describing the Yang Taiji curriculum. Thus, the significance of both the modern medical guidelines for health and Yang Taiji as an activity can be simultaneously presented in the concluding section.

OVERVIEW OF THE TAIL CURRICULUM

Chen Wangting (cir. 1597-1664) is credited as being the founder of the original Chen Style Taiji. As a garrison commander in Henan Province, Wangting absorbed many noted boxing styles of his day. He is said to have created boxing routines and associated exercises from which all other forms of taiji were derived (DeMarco, 1992:14-15; Wallace, 1998; Gu, 1984:1-12).

The Chen Style was been passed on for numerous generations only within the Chen family clan and a direct lineage continues today (Huang, 1993:51-54; Stubenbaum, 1994:90-99). However, a Chen family servant

named Yang Luchan (1799-1872) was taught by the 14th generation master, Chen Changxing (1771-1853). Yang was the first "outsider" to learn and popularize the system which is now associated with his family name and lineage (DeMarco, 1992:20; Jou, 1988: 42-44; Wile, 1996:3).

Like the evolution of painting styles, the original Chen Style Taiji differs from the Yang Style for social and political reasons related to the history of Chinese boxing. As modern weaponry became common, the necessity for secrecy waned in the traditional boxing traditions. At the same time, the purpose and function of taiji changed to meet the times (Wile, 1996:3-30).

The Yang Style was adapted to public needs and some of the original movements were eliminated or changed. The routines came to be practiced in a slow, even tempo, and relaxed manner. Once taiji was available to the general public, rumors spread of how practicing the art helped many improve their health and the number of practitioners rapidly rose. As a result, Yang Style Taiji soon spread across China. Its popularity and fame as an exercise system continues to spread throughout the world (DeMarco, 1992:20-24).

As a pure fighting system, the original Chen Style was developed for facing life-and-death situations. This necessitated familiarity with assorted weaponry and open-hand fighting skills. Leading masters attempted to take under consideration every aspect of the human condition which would help the boxer emerge victorious in any conflict. The truths they learned about the human body, mind, and spirit remains important today, even though the original intent of their research has been overshadowed by the emergence of taiji as an appropriate activity adaptable to modern health care (Koh, 1981a).

Taiji has a fairly long history based on Chinese cultural traditions reaching back over a millennium (Koh, 1981b). However, it was not until the early twentieth century that Yang Taiji became standardized under Yang Chengfu (1883-1936), the grandson of the founder Yang Luchan (Huang, 1993:65-68; Wong, 1998:204-205; Jou, 1988, 42-47). To this day, the leading representatives of the various taiji systems retain the traditional skills and knowledge associated with the original fighting arts, such as mastery of the straight sword, staff, and other weapons. But true masters of complete taiji systems are rare.

Today, many study taiji solely for health benefits and some dabble in self-defense aspects. As a result, Yang Taiji is the most popular style and is often mistakenly looked upon only as an exercise for the elderly (Lim, 1996:91). It appears this way because many teachers have only studied taiji for its health benefits and are unfamiliar with the complete system.

There are four aspects of taiji that should be noted. Taiji is a martial art, a holistic health exercise, an aesthetic dance-like art, and a form of moving meditation. Most students begin their taiji study because of an interest in one of these aspects. As a result, the traditional Yang Style Taijiquan curriculum focus on the following practices:

- 1) a solo routine,
- 2) two-person routines, and
- 3) taiji sword routines.



PART OF THE EARLY
MORNING TAIJI ROUTINE IN
A PARK IN XIAN, CHINA.

Photograph courtesy
of M. DeMarco.

Wu Hangxin and
Jin Huiying practicing
Two-person sword
ROUTINES IN
Hangzhou, China.
Photograph courtesy
of D. Mainfort.

THE TRADITIONAL YANG STYLE SOLO ROUTINE

Most students, even many taiji teachers, only practice the taiji solo routine. Traditionally, this routine consists of 108 martial movements which are arranged in a flowing sequence from beginning to end as a river current. There are forward, backward, sideways, and turning movements. The body moves harmoniously in a continuously even tempo which is slow enough to finely focus on being relaxed and balanced with every gesture (Jou, 1988; Huang, 1993; Wong, 1996).

Some taiji movements look poetically inspired with names like: "wave hands like clouds," "snake creeps downward," "rooster stands on one leg," and "embrace moon." Other movements are clearly martial in application, such as "lotus kick," deflect, push, roll-back, punch, and press.

For a beginning student, solo practice is characterized by tenseness, staccato movements, and off-balanced postures. To make the routine evolve into an exercise characterized by balance, smoothness, and relaxed grace can take many decades of continuous polishing through the forge of practice (DeMarco, 1997:48-58).

In China, taiji practitioners usually meet daily at dawn amid the fresh air and tranquil surroundings of a lake, park, or river bank (Reynolds, 1982:104-110). They often chat and stretch while waiting for others to arrive. When the teacher arrives, students organize to do the solo routine together in synchronized fashion. The routine takes from twenty to thirty minutes to perform, depending upon the tempo and exact number of movements included in the style. After the routine, the teacher will instruct beginners in new movements or offer tips to advanced students on how to improve a movement or offer insights into the deeper aspects of taiji's underlying philosophy (Horwitz, et. al., 1976:15-25; Lehrhaupt, 1993, 61-69; DeMarco, 1997).

After class, students may depart for breakfast, work, school, or remain to socialize for a short time. They usually discuss taiji in between more personal discussions concerning family, work, or other matters.



Some beginning students find taiji too boring and soon quit. Others, who have the patience to get through this initial stage, may continue the daily routine for years on end. Because of changing personal schedules, many practitioners quit the group after learning the solo exercise and practice on their own (U.S., 1996:46; Horwitz, et., 1976:15-25; Lehrhaupt, 1993, 61-69). The stability of the group rests primarily on the teacher's talents and knowledge which allows the teacher to provide continuous instruction, guidance, and inspiration for maintaining the interest of each student. Unfortunately, many so-called "taiji teachers" do not know the complete system and students may eventually quit the group and often taiji practice altogether.

The solo routine can be practiced daily for one's entire life and there will always be more to learn within its subtle complexities. A perceptive practitioner will receive instruction indirectly from the solo routine itself by continuously discovering ways of moving, thinking, and sensing that results from dedicated practice. The solo routine was designed for the practitioner to learn about himself, i.e., how the body and mind function together holistically (DeMarco, 1994). Thus, taiji is not just physical exercise. It is considered an "internal art" because of the importance placed on cultivating one's mental, emotional, and spiritual aspects. Since it is a "person" who does taiji, it is necessary to cultivate the whole person in order to make progress in mastering taiji.

Two-person Taiji Routines & Taiji Sword Routines

The true martial arts have always dealt with personal combat. If taiji's solo routine was designed to allow the individual to "know himself," two-person routines were designed to allow him to "know others." What this actually means can be ascertained by a description of the practices involved.

There are three main two-person exercises associated with Yang Taiji. The first, called "Sensing-hands" (tuishou, commonly called "Pushhands"), is a two-person exercise based on fundamental martial applications aligned in the four cardinal directions. The movements are: ward-off, roll-back, press, and push (Chen, n.d.; Kuo, 1994:33-42; Jou, 1988:226-253; Davis & Mann, 1996:55-56; Ma & Zee, 1990). Another duet practice is referred to as "Four-corners" (dalu) since it covers the four directions between the cardinal points with movements called: elbow, split, pull-down, and shoulder-strike. Duets are practiced in fixed stances or with active stepping (Chen, n.d.; Smith, 1997:56-69; Jou, 1988:253-256).

There is another rare duet routine called *sanshou*, often translated as "free hands" or "dispersing hands," which may refer to the self-defense goal of meeting any confrontation in a relaxed, easy manner to defeat the opponent. This is more complex than dalu and tuishou, containing a lengthy arrangement of attack and counter movements (Yiu, 1981).

The taiji sword routines have similar movements as those found in the solo routine. In the traditional solo sword routine, the sword's weight and length allows the practitioner to sense how his own movements effect the sword. A duet routine allows each swordsman to extend his sensitivity through the blade in order to detect the movement of his partner.

The duet practices of tuishou, dalu, sanshou and the taiji sword are complementary to the solo routine. They enlarge the scope of taiji by bringing in a complex host of elements such as speed, movement, direction, and intention. All the routines should follow the fundamental taiji principles of relaxation, balanced movement, coupled with a developed sensitivity required to be aware of the "one's self" and "others" (Honda, 1995; Jacobson, 1997).





Two-person practices.
Top:
Sensing-hands (tuishou)
Middle:
Four-Corners (dalu)
Bottom:
Free Hands (sanshou)

Illustrations courtesy of Oscar Ratti.

Assessing Yang Taiji as an Activity for Health

Eight guidelines for a successful approach to adopting and maintaining a physically active lifestyle were presented earlier in this paper. We can gain a better understanding of the role taiji may take in our lives by looking at these guidelines as a criteria for Yang Taiji practice.

1) Be Active!

The National Institutes of Health concluded that "All... should engage in regular physical activity at a level appropriate to their capacity, needs, and interest" (U.S., 1996:41). They reached this conclusion in large part because inactivity is a major risk factor for cardiovascular disease (CVD), a leading cause of death. The activity chosen can greatly effect other CVD risk factors, including high blood pressure, lipid levels, and obesity. However, people who are not physically fit, such as those who are overweight, smoke, or have arthritic problems, may find many exercises to be too difficult or strenuous to do. The paradox is that they need to exercise, but feel that exercise is too grueling to carry on regularly.

Taiji is highly adaptable to the practitioner's state of health and fitness. The movements can be done in high or low postures, in narrow or wide stances. Practicing the movements in a slow, relaxed manner ensures that anyone who can walk can learn the traditional solo routine. As one gradually learns the routine, he gains strength and flexibility (Lai, 1995). There is an awareness of becoming gradually more fit and taking satisfaction in the progress made.

2) Exercise at Least Thirty-Minutes Daily

Inactivity is not only a major cause of cardiovascular disease, but bears heavily on other diseases, such as diabetes, osteoporosis, hypertension, and even some cancers (U.S., 1996:43). A minimum of thirty minutes exercise is considered ample for reducing such illeffects (ACSM, n.d.:163).

The traditional Yang Style solo routine takes just about thirty minutes to perform. It can therefore be easily fit into a daily schedule with the practitioner knowing that the minimum exercise time is met.

The Yang Taiji solo routine is a comprehensive approach to exercising, affecting the cardio-respiratory system, body composition, muscular strength, and joint flexibility (Koh, 1982; Lumsden, 1998; Powerful, 1996; Jacobson, et. al., 1997). Benefits can be measured even after a month or two of taiji practice. However, as the National Institutes of Health stresses, "... physical activity must be performed regularly to maintain these effects" (U.S., 1996:43; Nieman, 1998:46).

Physical fitness is health and skill related. With the daily practice of taiji, skills are acquired which inspire the practitioner to not miss the exercise. As one acquires greater insights into the art, one's state of health also continually improves.

3) Participate in an Exercise Program of Moderate Intensity

High-intensity and fast moving sports are attractive to competitive ath-

letes, but these activities pose dangerous to their health. Their motivating factors may be a quest for fame and excitement rather than for health and fitness. Those who are truly seeking an activity for their health should beware of any dangers associated with the sport or activity they may consider. Under proper instruction, taiji poses no risk to the practitioner.

"The majority of benefits of physical activity can be gained by performing moderate-intensity activities" (U.S., 1996:43). Whether taiji's solo routine fits into the "moderate-intensity" range is questionable (Zhuo, et. at., 1984:9). A cardio-respiratory rate at 50% VOmax is recommended for general health (Nieman, 1998:9; ACSM, n.d.:158), but taiji's slow motion movements may not meet this criteria. More research is needed in this area to be certain. However, if the associated duet and swords routines are included in the assessment, then taiji would certainly meet this criteria as well. Because taiji practice falls in the low and moderately-intense category of exercise, there is little risk of injuring oneself during practice. There is also a stronger inclination for the individual to continue taiji practice on a regular basis.

4) Consider Behavioral and Attitudinal Factors in Selecting a Program

A big factor in selecting an activity for health and fitness is personality. The "behavioral and attitudinal factors that influence the motivation for and ability to sustain physical activity are strongly determined by social experiences, cultural background, and physical disability and health status. For example, perceptions of appropriate physical activity differ by gender, age, weight, maritial status, family roles and responsibilities, disability, and social class" (U.S., 1996:46). Although these barriers may be found in some degree in taiji practice, the most foreboding barrier is that taiji may be too exotic to be easily assimilated. First, one must be aware of what taiji is and what it has to offer. This may then motivate one to learn the art.

It is recommended that an activity should be enjoyable, easily fit into one's daily schedule, should be of low financial or social cost, and should present a minimum of negative consequences, such as injury, peer pressure, and self-identity problems (U.S., 1996:46). All of these recommendations concur with taiji practice, except that it is not easily accessible. Although there are more and more people claiming to teach taiji, most do not possess the appropriate experience or credentials. It is unfortunate that more competent teachers are not available; it is sad that charlatan posing as taiji instructors discredit the art and may actually harm their students through poor instruction.

5) Support from Family and Friends

The decision to start participating in a particular activity and the resolve to maintain a regular exercise schedule on a long-term basis greatly depends on the support, encouragement, and fellowship of others. This may be indirectly given by others who do not partake in the exercise itself, but direct support offered by fellow practitioners proves to be very significant for anyone who wishes to maintain a regular exercise activity.

Taiji is usually taught in pleasant natural surroundings conducive to the relaxed mode of the routine. The teacher-student relationship is important since the instructor serves as a example of a healthy lifestyle which should inspire and guide students in their own practice and lifestyle habits. This is further reinforced by like-minded individuals who have decided to make taiji part of their own lives (U.S., 1996:46).

Taiji practitioners not only exercise together, but discuss what they learn through their practice and incorporate it into their lives as much as possible. For example, taiji theory tells us to "go with the flow" and be in harmony with the movement of others, even when their movements are aggressive. When we are confronted with daily problems at home or at work, we can utilize the same principles: be calm, patient, balanced, and work with the situation without making the problem worse. A novice practitioner soon learns that taiji is more than just physical exercise. It demands the integration of one's whole being, tying-in the physical with the mental and spiritual aspects as well. Teacher and fellow students come to represent a "taiji family" which encourages regular practice and a commitment to a lifestyle conducive to the ultimate health goals of taiji.

6) Select an Activity Open to Males and Females

of Varied Ages and Appeals to All

Many exercises and leisure activities attract individuals of a particular age or gender. Taiji is usually taught in groups, but the foundation of its practice rests on the individual regardless of gender or age. A dedicated teacher will instruct on a one-on-one basis in order to develop the student as an individual artist with a unique personal makeup. It has been shown that any comprehensive physical fitness program must be individualized (Yan, 1995:62-63).

Taiji can be practiced by anyone, but does it appeal to all? It does not, primarily because it is too exotic and its theory and practice is little understood by the general public (Honda, 1995). However, even without a clear understanding of what taiji is, people are attracted to it for one or more of its qualities as a martial art, a wholistic exercise, a moving meditation, and a dance-like art form. For anyone who has taken the time to watch taiji for a few hours, there is a good chance that they would be drawn into its practice for one of the reasons mentioned.

7) Eliminate "High-Risk" Behaviors

The fundamental objectives in practicing the taiji solo routine are to seek relaxation in every move and to execute the movements slowly in a steady flow of balanced form. When students begin to practice taiji seriously, they soon discover many tensions in their bodies. Often, even when performing the simplest movements, they feel tense and awkward. They find that it is not the movement itself which is difficult to master, but dealing with underlying conditions that distort the movements. Taiji may bring an initial awareness of underlying problems and thus a desire in the individual to eliminate these problems.

Improvements in taiji practice can be felt by the practitioner and noticed by other students. To make continual progress requires the student to look inward, to modify any factors which cause the taiji movements to be too tense or the postures to fall off-balance. As a result, the student is encouraged by the presence of teacher, classmates and the art of taiji itself to modify any high risk behaviors, such as smoking and poor diet. To reinforce such changes in behavior, involvement in taiji calls for an appropriate change in attitude which guarantees a better, healthier lifestyle than the present one. Taiji beckons one to be constantly aware in order to make continual improvements in lifestyle, for only in this way can one approach a masterful level in the art.

8) Select an Activity That Can Be Done Life Long

"A key ingredient to healthy aging, according to many gerontologists, is regular physical activity" (Nieman, 1998:32). Taiji is noted for its suitability as an exercise for the elderly (Wolf, et. al. 1996, 1997b; Wolfson, et al., 1996; Schaller, K. 1996; Province, 1995). Its movements are slow and non-strenuous, yet invigorating to mind and body.

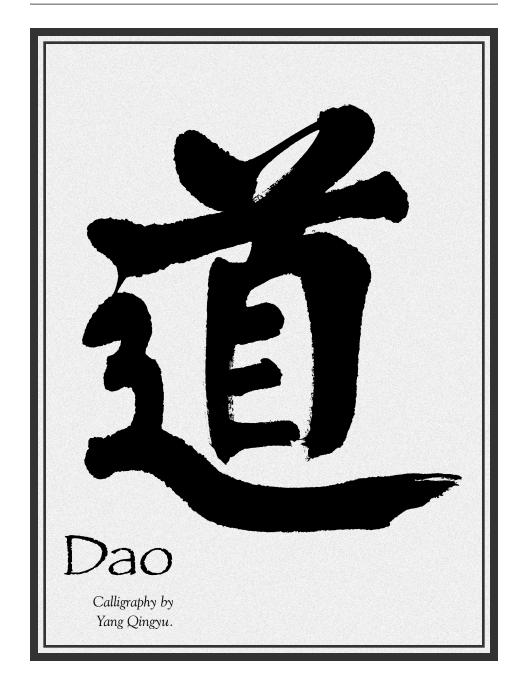
Taiji's suitability for the elderly does not mean it is unsuitable for younger generations, but many younger persons fail to see the value in taiji as an activity. Their temperaments are often too unruly and they usually do not have the patience to try taiji for a long enough time to actually feel the beneficial effects of the exercise.

Those attracted to taiji are usually adults in their thirties and older. The quest for relaxation is a primary motivation factor, but others come to taiji from other sports and activities that have caused them physical or mental injury. In general, taiji is looked at for its therapeutic benefits to mind, body, and spirit (Zhuo, 1982). The desire to obtain such benefits can start at any age. A look at the graceful aging of many noted taiji instructors illustrates that they often started taiji because of an illness, benefited from it, and so dedicated themselves to daily practice for the rest of their lives. Some centenarians continue to teach taiji on a daily basis to "youngsters" in their 70's, 80's, and 90's.

SUMMARY

There is a strong agreement between the National Institute of Health's guidelines and the Yang Taiji curriculum indicating that taiji meets the criteria as an activity that we may consider in our research concerning the relationship between lifestyle and well-being. However, we should look a little closer before making any final conclusion.

Guidelines numbered 1 thru 3 involve the participation in an activity of moderate intensity, hopefully on a daily basis. Regularity of practice is necessary to attain and/or maintain health. Through its own design and traditional method of instruction, taiji clearly meets these guidelines (Koh, 1981a:15-17, 21).



"IF YOU'RE
ONE WITH
THE DAO,
TO THE END
OF YOUR DAYS
YOU'LL SUFFER
NO HARM."

- Laozi

Henricks, 1989:68

Guideline number 4 considers behavioral and attitudinal factors in selecting an exercise or activity. Yang Taiji is based on Daoist principles, which value spiritual and mental development along with the physical aspects. It is non-competitive and not as exciting as most mainstream sports. For these reasons, Yang taiji is fitting for some personalities, but certainly not all. Similarly, in respect to guideline 6, Yang Taiji may be open to all, but it has a limited appeal because of its call for patient students who are able to find joy in the subtleties of the art.

The calming, relaxed practice of taiji attracts individuals who prefer or need this in their life. So, as encouraged in guideline number 5, taiji practitioners find an active support group from like-minded practitioners and others who may see the value in it but may not have the time or opportunity to be involved themselves.

Activities conducive to a healthy lifestyle are given special attention in guideline 7. When we consider the theory and practice of Yang Taiji, we find that, in addition to offering an encompassing system for health and fitness, its practice has a strong tendency to eliminate "high-risk" behaviors (U.S., 1996:46). To make progress in doing taiji, it is necessary to look deeply into one's character development. Only when a practitioner does this can the movements reflect the tranquility, grace, and balance associated with the art. This concurs with an ancient Chinese proverb: "What is accomplished in the mind, is made known by the hand."

Guideline 8 requires that such an activity be suitable for long-term practice. Yang Taiji body mechanics allow almost anyone to practice the art. The fact that it is noted for benefitting the elderly attests to its suitability for the aged as well as a therapeutic system (Nieman, 1998:125; Yan, 1995:61; Wolf, 1997a).

To assess Yang Style Taiji as a physical activity we must be aware that it is based on the Daoist yin-yang principle. It seeks to harmonize the body and mind, the internal with the external. Yang Taiji involves the total person, working on all the body's systems. Because of its focus on relaxation, even when practiced with moderate intensity, the movements gently exercise the joints, develop balance, and calm the nerves.

From research regarding Yang Taiji, we see that this unique art offers "health" in the complete sense as defined by the World Health Organization "as a state of complete physical, mental, social, and spiritual well-being." It is unfortunate that such an artistic gem remains hidden behind cultural barriers which color our receptivity to the exotic.



BIBLIOGRAPHY

- American College of Sports Medicine [ACSM]. (n.d.). ACSM's Guidelines. pp. 153-176.
- BAER, K. (1997 July). A movement toward t'ai chi. Harvard Health Letter, 22 (9): pp. 6.
- CHEN, Y. (n.d.). T'ai-chi ch'uan: Its effects and practical applications. Hong Kong: n.p.
- DAVIS, D., & MANN, L. (1996). Conservator of the taiji classics: An interview with Benjamin Pang Jeng Lo. *Journal of Asian Martial Arts*, 5 (4): 46-67
- DEMARCO, M. (1992). The origin and evolution of taijiquan. Journal of Asian Martial Arts, 1 (1): 8-25.
- DEMARCO, M. (1994). The necessity for softness in taijiquan. Journal of Asian Martial Arts, 3 (3): 92-103.

- DEMARCO, M. (1997). Taijiquan as an experiential way for discovering Daoism. Journal of Asian Martial Arts, 6 (3): 48-59.
- Gu, L. (1984). The origin, evolution and development of shadow boxing. In Zhaohua Publishing House (Compilers), Chen Style taijiquan (pp. 1-12). Hong Kong: Hai Feng Publishing Company.
- HENRICKS, R., (TRANS.). (1989). Lao-tzu te-tao ching. New York: Ballantine Books.
- HONDA, C. (1995 February). Cultural diversity: Tai chi chuan and Laban Movement Analysis. Journal of Physical Education, 66 (2): 38.
- HORWITZ, T., KIMMELMAN, S., & LUI, H. (1976). T'ai chi ch'uan: The techniques of power. Chicago: Chicago Review Press.
- HUANG, A. (1993). Complete tai-chi: The definitive guide to physical and emotional self-improvement. Rutland, VT: Charles E. Tuttle Co.
- JACOBSON, B., CHEN, H., ET AL. (1997 February). The effect of t'ai chi chuan training on balance, kinesthetic sense, and strength. Perceptual & Motor Skills, 84 (1): 27.
- Jou, T. (1981). The tao of tai-chi chuan: Way to rejuvenation. Warwick, NY: Tai Chi Foundation.
- KOH, T. (1981a). Tai chi chuan. American Journal of Chinese Medicine, 9 (1): 15-22.
- KOH, T. (1981b). Chinese medicine and martial arts. American Journal of Chinese Medicine, 9 (3): 181-186.
- KOH, T. (1982). Tai chi and ankylosing spondylitis A personal experience. American Journal of Chinese Medicine, 10 (1-4): 59-61.
- KOH, L. (1994). The t'ai chi boxing chronicle. (Guttmann, Trans.). Berkeley, CA: North Atlantic Books.
- LAI, J., ET. AL, (1995 November). Two-year trends in cardiorespiratory function among older tai chi chuan practitioners and sedentary subjects. *Journal of the American Geriatric Society*, 43 (11).
- LEHRHAUPT, L. (1992). Taijiquan: Learning how to learn. Journal of Asian Martial Arts, 2 (1): 60-69.
- LIM, P. (1992). The combative elements of Yang taijiquan. Journal of Asian Martial Arts, 5 (3): 90-99.
- LUMSDEN, D., (1998 February). T'ai chi for osteoarthritis: An introduction for primary care physicians. *Geriatrics* 53 (2).
- MA, Y., & ZEE, W. (1990). Wu style taijiquan push-hands (tuishou). Hong Kong: Shanghai Book Co.
- NIEMAN, D. (1998). The exercise-health connection. Champaign, IL: Human Kinetics.
- Powerful evidence that the martial art tai chi can help frail patients with osteoporosis. (1996 June). Backletter, 11 (6): 63.
- REYNOLDS, D. (1982). The quiet therapies: Japanese pathways to personal growth. Honolulu: University of Hawaii Press.
- SCHALLER, K. (1996 October). Tai chi chih: an exercise option for older adults. *Journal of Gerontol Nursing*, 22 (10): 12-17.
- SMITH, R. (1994). Dalu and some tigers. Journal of Asian Martial Arts, 6 (2): 56-69.

- STUBENBAUM, D. (1994). An encounter with Chen Xiaowang: The continued growth of Chen taijiquan. *Journal of Asian Martial Arts*, 3 (1): 90-99.
- U.S. Department of Health and Human Services. (1996). Physical activity and health: A report of the Surgeon General. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion.
- WALLACE, A. (1998). Internal training: The foundation for Chen taiji's fighting skills and health promotion. *Journal of Asian Martial Arts*, 7 (1): 58-89.
- WILE, D. (1996). Lost t'ai-chi classics from the late Ch'ing dynasty. Albany, NY: State University of New York Press.
- WOLF, S., ET AL. (1993 March). The Atlanta FICSIT study: two exercise interventions to reduce frailty in elders. Journal of the American Geriatric Society, 41 (3): 329-332.
- Wolf, S., Et al. (1996 May). Reducing frailty and falls in older persons: an investigation of tai chi and computerized balance training. Atlanta FIC SIT Group. Frailty and Injuries: Cooperative Studies of Intervention Techniques. Journal of the American Geriatric Society, 44 (5): 489-497.
- WOLF, S., ET AL. (1997a). Exploring the basis for tai chi chuan as a therapeutic exercise approach. Arch Physical Medical Rehabilitation, 78 (8): 886-892.
- WOLF, S., ET AL. (1997b) The effect of tai chi quan and computerized balance training on postural stability in older subjects. Atlanta FICSIT Group. Frailty and Injuries: Cooperative Studies on Intervention Techniques. *Physical Therapy*, 77: 371-381.
- Wolfson, L., Et al. (1996 May). Balance and strength training in older adults: intervention gains and tai chi maintenance. *Journal of the American Geriatric Society*, 44 (5): 498-506.
- Wong, K. (1996). The complete book of tai chi chuan: A comprehensive guide to the principles and practice. Rockport, MA: Element Books, Inc.
- YAN, J. (1995 November/December) The health and fitness benefits of tai chi. JOPERD, 66 (9): 61.
- YIU, K. (1981). Tui shou and san shou in t'ai chi ch'üan. Hong Kong: Self Published.
- ZHUO, D., SHEPHARD, R., PLYLEY, M., & DAVIS, G. (1984). Cardiorespiratory and metabolic responses during tai chi chuan exercise. Canadian Journal of Applied Sport Science, 9 (1): 7-10.
- ZHUO, D. (1982). Preventive geriatrics: An overview from traditional Chinese medicine. American Journal of Chinese Medicine, 10 (1-4): 32-39.