

Cardio Taiji for Wellness

Chi-hsiu D Weng¹, Timothy S. Tin²

US Collegiate Taiji Federation

Abstract—The concept of Taiji (Tai-chi), consisting of Yin and Yang, originates from the ancient Yijing (I-ching), the Book of Changes. It is the traditional metaphysical Law of China, and has been described as Dao (Tao) or “The Way.” Two years ago, in December, 2020, Taijiquan (the fighting system of Taiji) was recognized and accepted as an Intangible Heritage of Humanity by the United Nations Educational, Scientific and Cultural Organization (UNESCO). This study reviews the Taijiquan technique for assisting in life and wellness, and presents a brief review of the effect of Cardio Taiji on blood pressure.

Keywords: Yin & Yang, Balance, Holistic Healing, Wellness Continuum, Security, Cardio Exercise, Harmony, Tao/Dao, The Way

Introduction

For centuries, Taiji theories have been widely applied as a vehicle for the cultivation of the body, mind and spirit (Figures 1 & 2). Thus, the current trend of study on Taiji has been directed towards measurable Cardio Taiji for fitness and Therapeutic Taiji for integrative medicine. This includes preventive medicine and rehabilitation.

Cardio Taiji is a relatively new Taiji exercise which is considered safe and benefits cardiovascular function. In 2002 a debut performance was given at the IDEA Annual Conference in San Diego; a work-shop was conducted at the 2005 AAHPERD Conference in Chicago, and Cardio Tai Chi was added as a new event in the 2003 International Kungfu Tournament in Rio de Janeiro. It was also exhibited at the 2006 First World Tai Chi Chuan Championship in Taipei, and at the International Tai-chi-chuan Tournament at San Jose State University.¹

The work-out presented in this paper, which has been shown to aid blood pressure in participants, integrates

traditional Taiji with a high intensity interval training method. This exercise is considered useful in helping people maintain general health, who have only limited time to exercise.

Cardiovascular fitness and high intensity intervals have been proven to be effective exercises for health maintenance. Taiji movement has also been studied by many scholars and has become more and more popular around the world. The integration of high intensity cardio exercise and traditional Taiji is a new contribution to the world of sport and medicine.

What is The Eight Dimensions of Wellness?



Fig. 1 Overview of the Integration of Tai Chi and Aerobic Exercise designed by the author Chi-hsiu Weng.

DOI: 10.57612/2022.JTS.01.05

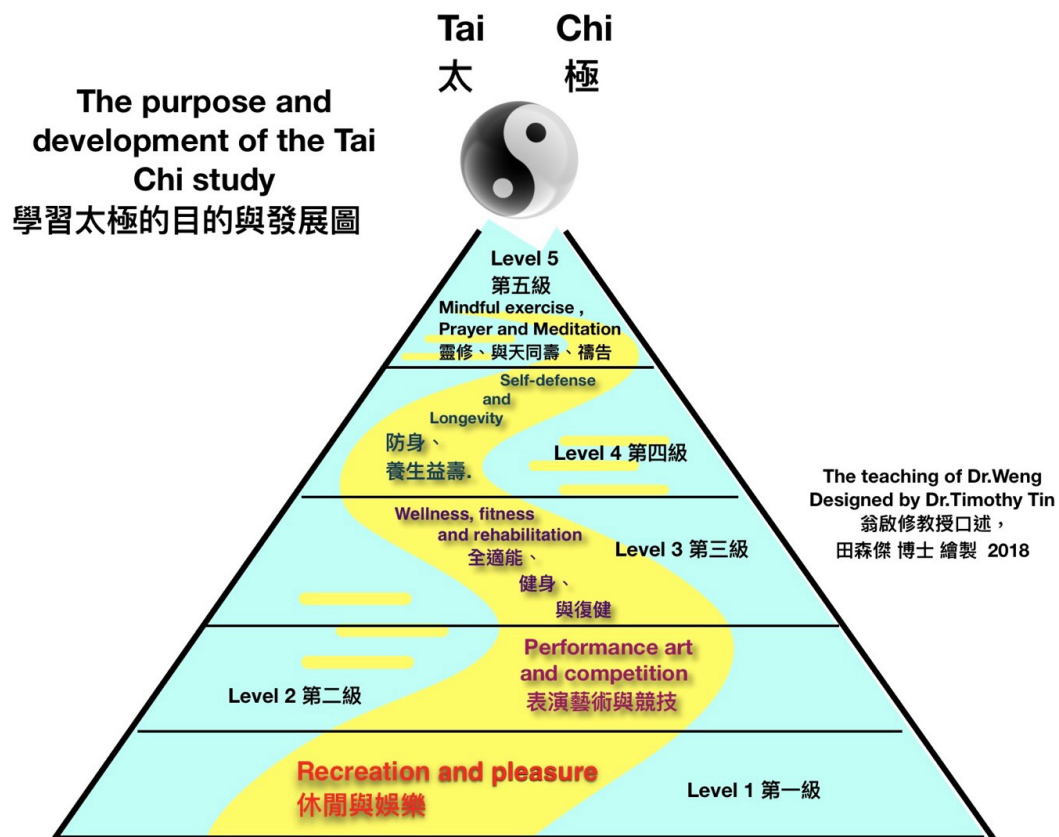


Fig. 2 The way of pursuing Taiji.

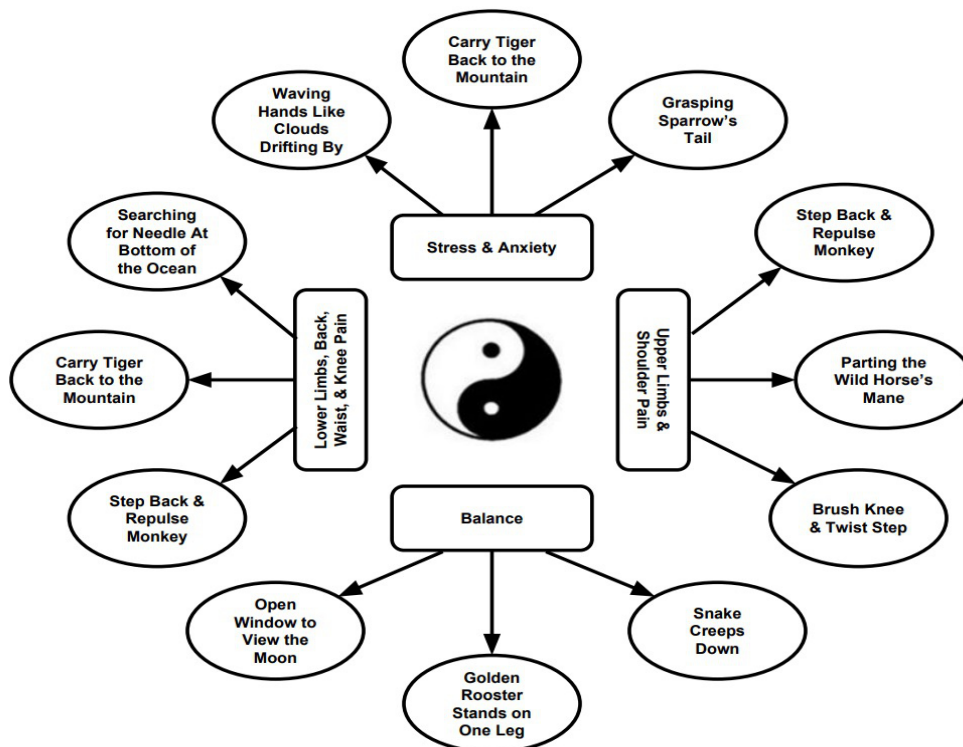


Fig. 3 Examples of Taiji techniques classified for sport prescription purposes.

DOI: 10.57612/2022.JTS.01.05

Taiji as an essential activity

There are many negative influences that have become apparent and been exacerbated under the shadow of COVID 19. The problem of lack of time and space to exercise is one of the problems that occurred after lock-down in many cities of the world. According to psychological research by the Department of Psychiatry at the University of Oxford, Dr. Diamond Rowan said, "During this pandemic, there are likely to be additional barriers to increasing activity at the very time it may be most beneficial in alleviating physical and psychological stresses. For example, anxiety about leaving the house, the closure of gym facilities, and less opportunity to exercise with others."² Therefore, finding a healthy exercise, after the pandemic phase has passed, is an urgent need.

Cardio Exercise has been emphasized for health maintenance

The WHO has recommended that adults between 18–64 years old should do at least 150 minutes of moderate intensity aerobic physical activity throughout the week, or 75 minutes of vigorous intensity aerobic physical activity per week, or an equivalent combination of moderate- and vigorous-intensity activity. Aerobic activity should be performed in bouts lasting at least 10 minutes duration.³ The 2008 Physical Activity Guidelines for Americans also states: "People who do moderate or vigorous-intensity aerobic physical activity have a significantly lower risk of cardiovascular disease than do inactive people. Regularly active adults have lower rates of heart disease and stroke, and have lower blood pressure, better blood lipid profiles, and fitness."⁴

There have been many positive results in the research of Tai Chi and general health. According to the study of a review of literature by Taylor-Piliae: "Simplified forms of Tai Chi are ideal for people with impaired health conditions, including those with heart disease and the elderly." Consistent findings were also observed in the significant reduction in blood pressure reported over multiple studies, especially when Tai Chi practitioners were compared to inactive control groups. After the study of the comparison of

the effectiveness of Tai Chi versus people who went on brisk walks, it indicates that the Cardiopulmonary benefits of Tai Chi may partially be explained as a response to aerobic exercise.

Definition of Taiji and Kungfu

Tai Chi Kung Fu is one of the great health exercises of the ancient world. Dr. Peter M. Wayne, author of "The Harvard Medical School Guide to Tai Chi" explains, "Though these roots are thousands of years old, the formal name Tai Chi Chuan was coined as recently as the seventeenth century as a new form of kung fu, which integrates mind-body principles into a martial art and exercise for health."⁵ Dr. Wayne also described Tai Chi Chuan as the "manifestation or integration of these philosophical concepts into the body."⁶ "One reason Tai Chi is popular is that it is adaptable and safe for people of all ages and stages of health," he points out. "Recent Tai Chi forms have even been developed for individuals to practice in wheelchairs. And although few formal medical-economic analyses have been conducted, Tai Chi appears to be relatively cost-effective."⁷ Even though there are many benefits of Tai Chi practice, the questions regarding scientific evidence are still to be answered. According to Dr. Wayne's research, "Tai Chi can increase the heart rate to between 50 and 74 percent of the maximum, depending on the type and intensity of Tai Chi and your age. Importantly, Tai Chi is highly adaptable to your heart's capacity for exercise because you can modulate the intensity."⁸

Designing Cardio Taiji

"Numerous studies have shown that Tai Chi can be considered an aerobic activity of low-to-moderate intensity, depending on your training style, how deep you sink into the postures, how fast you move from one posture to the next, and the duration of your practice."^{9,10} It is possible to modify the Tai Chi exercise into an aerobic exercise. Cardio Tai Chi is one of the effective physical activities which integrates aerobic exercise and traditional Tai Chi Kung Fu. This exercise was created by the co-author of this paper, Dr. Chi-hsiu Weng, and was developed in response to the urgent need for a cardiovascular workout that did not put the joints, ligaments, and

DOI: 10.57612/2022.JTS.01.05

muscles at risk. This being important for participants who have poor general health.¹¹⁻¹³

According to Dr. Weng's design, "Cardio Tai Chi maintains a high energy level while remaining less aggressive. In this way, there is a much less possibility of hyper-extension of the joints or pulled muscles when training."¹² There are several highlights of this Cardio Tai Chi exercise: 1. Simplicity: The design is based on the principle of simplicity so that anyone can easily learn it, while having fun, without the frustration that is often involved in memorizing the sequence of complex Tai Chi forms. 2. Efficiency: It is an efficient form of cardio fitness training combined with coordination skills of martial arts which reaches the standard of aerobic exercise. 3. Adaptability: It can be practiced simultaneously with any current martial arts or even dance training. 4 Flexibility: The distance and speed

of training can be adjusted and tailored to each individual. 5. Applicability: It is a practical Kung Fu for self-defense and even qualifies for kickboxing competitions. For first effects to be seen, it has been found that it is possible to undertake as few as 10 Cardio Tai Chi course over a period of 10 weeks. Each class consists of several Tai Chi stances at three different levels of increasing intensity as the course progresses. Each level has two Tai Chi stances selected for fast movement as high intensity interval training and one stance chosen for low intensity at a slower pace. Two specific stances are separately selected as transitional motions (see Figure 4).

There are three repeated sections in level one, four sections in level two and five sections in level three. The high intensity movement of each stance gradually transitions the body from moderate speed to higher speed within 90 seconds in each section.

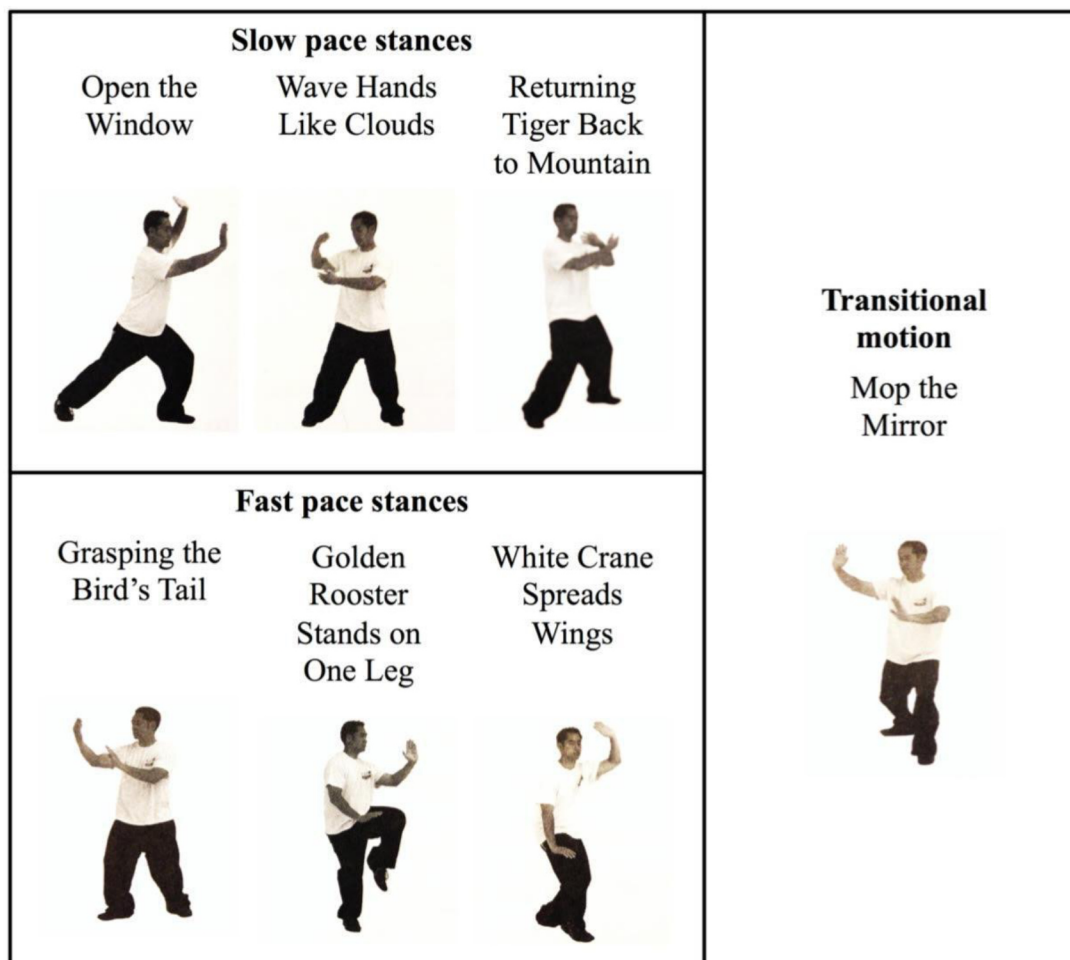


Fig. 4 Examples of Techniques. Images provided by *She-peng Weng*.

Scientific support of Cardio Taiji

Many have questioned whether the Cardio Tai Chi has any effectiveness on cardiovascular fitness. For example, in 2017, around 160 research papers were submitted by hundreds of international scholars to The International University Sports Federation summer conference in Taipei City. Among those papers, only one topic was related to the effectiveness of Tai Chi. This being “The Study of the Effectiveness of Cardio Tai Chi for Cardio-respiratory Fitness: A Pilot Study.”¹¹ The study was based on twenty-eight participants who were enrolled in the Cardio Tai Chi classes; only 9 participants completed the classes and thus were considered for the data analysis. A significant difference of means (-6.7 L/min) was observed on pre-post VO₂max. In Fig. 4, the image shows a selection of slow, fast and transitional stances used in Cardio Tai Chi. This involved an exercise regime where the participants undertook a daily group of exercises.

For the purpose of this test this involved a 3 to 5 minute warm up period, which was then followed by the participants undertaking 8 cardio exercises, which are commonly known as grasping bird tail, golden rooster standing on one leg, white crane spread wings, waving hands like a cloud drifting by, playing the fiddle, frog kick, open the window to view the moon, and parting wild horse mane. This was then followed by a 5 minute cool down period where the participants did two exercises. These being carry the tiger back to the mountain and brush knee twist step.

Conclusions

The conclusion of the initial study showed that Cardio Kung Fu with the practice of Tai Chi techniques has benefits for the Cardiopulmonary function. Although traditional Tai Chi is an ancient healthy exercise for longevity, Cardio Tai Chi is a modern healthy exercise for both wellness and longevity.

References

1. For more information on the Cardio Taiji course, please refer to www.collegetaiji.org US Collegiate Taiji Federation.
2. Rowan, Diamond, Physical activity in a pandemic: A new treatment target for psychological therapy. Retrieved June 25, 2020, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7361852/>
3. Global Strategy on Diet, Physical Activity and Health: Physical Activity and Adults. (2018) Retrieved January 10, 2018, from World Health Organization website: http://www.who.int/dietphysicalactivity/factsheet_adults/en/
4. 2008 Physical Activity Guidelines for Americans, Office of Disease Prevention and Health Promotion, Office of the Assistant Secretary for Health, Office of the Secretary, U.S. Department of Health and Human Services. p.11. <https://health.gov/paguidelines/pdf/paguide.pdf>
5. Brown, Nell Porter, (January-February 2010). Easing Ills through Tai Chi: Researchers study the benefits of this mind-body exercise. Harvard Magazine. Retrieved from <https://harvardmagazine.com/2010/01/researchers-study-tai-chi-benefits>
6. Ibid.
7. Ibid.
8. Dr. Wayne, Peter M., Fuerst Mark L., (2013). The Harvard Medical School Guide to Tai Chi: 12 week to a Healthy Body, Strong Heart & Sharp Mind. Boston, MA: Shambhala Publications. P.154. Also see reviews by C. Lan et al., “The Exercise Intensity of Tai Chi Chuan,” *Medicine and Sport Science* 52 (2008): 12-19.
9. Dr. Wayne, Peter M., Fuerst Mark L., (2013). The Harvard Medical School Guide to Tai Chi: 12 week to a Healthy Body, Strong Heart & Sharp Mind. Boston, MA: Shambhala Publications. P.27
10. Huerta Ojeda, Galdames Maliqueo, Cataldo Guerra M, Barahona Fuentes, Rozas Villanueva, Cáceres Serrano P. (2017). “Effects of a high intensity interval training on the aerobic capacity of adolescents.” Retrieved January 16, 2018, from NCBI website: <https://www.ncbi.nlm.nih.gov/pubmed/29189854>
11. Tin, Timothy Sam-Kit, Ferreira, Arthur de Sá, Weng, Chi-hsiu Daniel. (2016) The Study of the Effectiveness