



Tai Chi for Two

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"I love Push Hands. After my first Push Hands class, I was laughing I was so happy," says Roger, age 47, a marketing manager. "It's easy to relax when you do solo Tai Chi, but when you match up with someone who is trying to push you, this challenges you to maintain what's going on both inside and outside of you. You have to be straightforward with your feelings, acknowledge where you are right away, and be honest with yourself."

"By nature, I'm not an extrovert, but my role at work is to do presentations and run meetings," continues Roger, who attends Tai Chi classes twice a week and does an hour of daily practice on his own. "I often found this was exhausting, but that doesn't happen anymore. I recently gave a presentation at a large conference, and I was completely unfazed. I attribute this to Tai Chi and Push Hands to helping me feel more comfortable in leading."

"I've also learned through Push Hands not to have an automatic defensive reflex when challenged, as happens to many people," says Roger. "One of the objectives of Push Hands is to yield, wait, and then return the force. This comes up all the time in my work. If I express an idea, and someone gets defensive, I don't get my hackles up any more. I'm less apt to get into a cycle of defensiveness, and my meetings are more productive."

With diligent practice and a good teacher, and through the skillful application of active ingredients, Tai Chi can be a highly effective fighting art. To develop these skills, your Tai Chi training needs to include interactive partner exercises that complement your solo Tai Chi practice. "Tai Chi for two" exercises include techniques in simple pushing and yielding, rooting and strengthening, and both choreographed and free-form movements that stimulate dynamic balance, improve reflexes, and train your ability to neutralize and issue energetic attacks.

To become a good car driver, you need to learn more than the rules of the road. You need time behind the wheel, in traffic, and on the freeway to make progress. The same is true for developing martial arts skills in Tai Chi. You need substantial two-person training to apply Tai Chi principles effectively for self-defense. However, the benefits of partner work goes beyond martial training. Two-person Tai Chi exercises help you with your solo practice and your everyday life, even if you never thought about training in combat and self-defense.

For me, partner work is one of the most transformative and enjoyable aspects of practicing and teaching Tai Chi. Working with another person allows you to explore the application of Tai Chi movements and physical principles related to structure and movement. In addition, it provides a safe, structured, intimate framework to explore emotional and psychosocial issues. During physical interactions with others in Tai Chi, most people exhibit the same behaviors they adopt during encounters with people in general. Your emotional reactions to the physical, energetic pushing and pulling during two-person Tai Chi may mirror how you respond to suggestions from colleagues

or advice from managers, or your preference to taking on a leadership or a subordinate role on work projects. You may learn how you typically handle uncertainty and how to learn from your mistakes. Partner work serves as a catalyst for progress in Tai Chi and, at the same time, can enhance your daily social encounters.

Most Tai Chi teachers integrate some form of two-person interaction in classes. Some teachers introduce these exercises early on in training as beginning students learn basic principles and solo forms. Others wait to teach these exercises to intermediate or advanced students who have already learned basic forms. In my Tai Chi school, I integrate interactive exercises into the most basic Tai Chi classes. Our Harvard team and other researchers have integrated simple two-person exercises into the protocols of clinical trials, including trials that target older or health-impaired adults.

This chapter delves into the advantages of partner work in Tai Chi. Partner work includes a great diversity of exercises and training goals. It is beyond the scope of this chapter to survey all of these exercises. Numerous excellent books are available that are entirely devoted to learning and mastering interactive Tai Chi exercises.¹ This chapter briefly introduces how working with a partner can be an excellent vehicle for exploring the active ingredients of Tai Chi, and how it can influence your health.

Learning through Interactive Tai Chi

Tai Chi has evolved over many generations through the transmission of kinesthetic knowledge passed down from teacher to student. A great deal of this transmission takes place nonverbally through mindful touch, heightened sensory awareness, and shared movement. In addition to developing your awareness and sensitivity, two-person exercises also enhance your strength and flexibility.

Mindful Touch

In working with some of my Tai Chi teachers and other high-level practitioners, I have had the sense that at the instant their hands touched my body, they knew a great deal about my physical and emotional state. Even before I could push them or evade their advance, they could sense my intention and "beat me to the punch." During these encounters, my teachers also seemed to convey nonverbal information intentionally; it was as if their touch and movements shared information with me about my movements and energy patterns. Becoming aware of their physical, energetic qualities provided me with a reference against which I could calibrate my own qualities and abilities.

Enhancing Form and Function

Touch is as important as vision and hearing for learning and retaining information. Tactile activities, such as playing with blocks, help children improve everything from their math abilities to thinking skills. Lack of touch can lead to emotional disturbances, as well as to lessened

intellectual ability and physical growth, reduced sexual interest, and even immune system weaknesses.²

Educators increasingly appreciate what is called haptic or kinesthetic learning—that is, a learning style that occurs primarily through touch or movement. Hands-on physical engagement is the preferred learning style for approximately one out of every three people. The connection between touch and learning is instinctual, begins in infancy, and continues throughout life.³

Recent developments in robotic engineering have targeted haptic learning to teach people complex motor control skills. Subjects in studies have improved their piano playing by wearing a robotic glove that guides passive finger movement related to specific note sequences. Also, adults learning to write Japanese and Arabic characters have become more proficient when robotic devices applied provide gentle feedback to guide their hand movements during writing.⁴

Similarly, the tactile feedback you get from Tai Chi partner work can accelerate your understanding and practice of solo forms. Your body remembers the feelings of being rooted while pushing, of being relaxed and centered, and of being aligned while warding off an attack. Kinesthetically, your recall of these feelings adds intention and focus when you practice the solo form. Grand Master Cheng Man Ching regularly taught students to imagine an opponent in front of them while doing the solo form.

One of my teachers, Robert Morningstar, used a fun exercise to illustrate how essential tactile feedback is for learning Tai Chi. He would ask students to raise their right index finger in the air and, without thinking or planning, touch it to their navel. Then immediately after releasing the right hand, without thinking, they would repeat this with the left index finger. He called this his “Navel Acad-

emy Test.” Some people said they could accurately touch their navel with both fingers, but I am not sure that all of them were being honest. Most people miss with one or both fingers.

Robert used this exercise to emphasize that even our own hands are not sure where our body’s center is. Sometimes, one hand “thinks” it’s in a different location than the other one does.

He argued that this is why you need a good Tai Chi teacher—to adjust your posture physically, to help calibrate your alignment, to point out where you are holding tensions, and to note any musculoskeletal imbalances. The nonverbal physical adjustments you get from your teachers, in addition to the kinesthetic feedback you get through partner practice, help you develop a level of self-awareness not accessible through solo practice alone.

Not surprisingly, research supports that Tai Chi training leads to heightened sensory awareness regarding the position and movement of the joints. This likely underlies Tai Chi’s positive effects on balance and musculoskeletal

health.⁵ Other research conducted at Harvard Medical School by my colleague Dr. Cathy Kerr shows that experienced adult Tai Chi practitioners have greater tactile acuity—for example, heightened sensitivity in their fingertips to discriminate fine textures, compared to age-matched controls.⁶

Enhancing Strength and Flexibility

Continuously shifting your weight back and forth in concert with another person, including yielding to and issuing even the most gentle pushes, builds up your leg, arm, and core strength. Interactive Tai Chi exercises also expose you to a variety of movement patterns. As you practice with different partners in a class, your partner’s size and movement patterns will vary. These variations in partners expand the diversity and range of motion of



the joints you typically use during two-person Tai Chi, as compared with the solo form. With its emphasis on efficiency and minimizing muscular tension, interactive Tai Chi training enhances the Tai Chi principles of structural integration and connecting the body parts. The gains you make in strength and efficiency readily translate to everyday activities, such as lifting heavy objects without overtaxing or damaging individual body parts, in particular the back, shoulders, or knees.

To date, little research has specifically evaluated the potential benefits of interactive Tai Chi for musculoskeletal health. One small, randomized trial by researchers in China evaluated multiple forms of exercise for enhancing bone-mineral density in older post-menopausal women. Groups were assigned to rope skipping, Mulan Boxing (a Kung Fu-like dance form), Tai Chi solo form, Tai Chi Push Hands, and a control group that did no exercise. The Tai Chi Push Hands group made the greatest improvements in bone density.⁷

A second study helps interpret how Push Hands may improve bone density and highlights other unique features of interactive Tai Chi. In this study, researchers studied the biomechanics of a Tai Chi master who had 40 years' worth of experience as he defended himself against being pushed. His movements were compared to those inexperienced in Tai Chi. Movements were videotaped and digitized using a motion-analysis system, and the activity of muscle groups and the force of the feet on the ground were also measured.

Not surprisingly, the master maintained his balance by making multiple subtle adjustments in his posture, whereas those who had not done Tai Chi before fell over easily. The master shifted his body weight from the front to the rear foot and adjusted his center of gravity in response to the direction of incoming pushes. What's more, measurements showed the muscles in his arms and torso remained relaxed, while his leg muscles, in particular the hamstring muscles in the back of the leg, were very active.

The combination of increased muscle and joint loading in the legs suggests that Push Hands may enhance the weight-bearing qualities of Tai Chi and therefore make it effective for maintaining bone health.⁸

Interactive Tai Chi as Applied Philosophy

"Push Hands gives you the opportunity to develop new capacities in yourself and to become more sensitive to others," says Florence, age 55, who started doing Push Hands one and a half years ago after practicing Tai Chi for 20 years. "I felt that I didn't get it at first, but it's a lesson in perseverance and building inner strength. You learn about yourself and other people when you're interacting."

"It's amazing how different everybody is. Push Hands shines a spotlight on different ways of feeling. It's an intimate experience," says Florence, who works in retailing. "Some people go hard and fast, others soft and slow, and

this affects how you work with them. If I push with three people who are hard, I feel different when I push with someone who is a soft person. This puts a lens on their personalities, and my personality and habits, and how we all interact. I have to persevere through real difficulties at work, and Push Hands has given me more courage to try more, and to relax instead of being fearful."

Practicing interactive exercises can bring to life the philosophical wisdom inherent in Tai Chi. It's one thing to hear a phrase like "go with the flow" and think: okay, that makes sense. In two-person practice, you get to experience genuine physical and emotional yielding, to stay relaxed, yet alert, in the presence of an aggressive action. This type of Tai Chi training manifests what often sounds like lofty, esoteric principles. This embodied experience helps you progress with solo and

interactive Tai Chi and can flow into other social interactions as well.

One of my teachers, Arthur Goodridge, often described interactive Tai Chi as a conversation or dialogue. He also emphasized the importance of "listening" with the entire body. Just as you must be a good listener to be



fully engaged in a verbal conversation, you must develop what the Tai Chi classics call *tien jin* (“listening energy”) to interact physically and energetically during two-person Tai Chi.

Tai Chi classics regard the ability to listen to your partner’s movement and energy as one of the most fundamental skills. Of course, you do not do Tai Chi listening with the ears, but rather with the body. You listen with your skin, and with other poorly understood neurophysiological receptors, to detect what an opponent might do from the moment you make physical contact (commonly with forearm or palm, but it could be any body part). Listening provides information on the strength and direction of the upcoming attack. As you listen, you simultaneously tune in to your partner, and yourself. From this place of contact and with heightened sensitivity, you can apply many other Tai Chi techniques, such as yielding to neutralize and dissipate your opponent’s force. Following an evasive action, you can take advantage of your partner’s loss of mechanical advantage, which is often called “borrowing energy,” and advance with your own mindful, strategically directed strength. The net result is that you lead by first following. Regardless of the techniques you use, listening is the key fundamental principle that underlies many practical and philosophical Tai Chi principles.

In introductory Tai Chi classes, I encourage students to explore a simple, informative exercise that involves leading and following. After pairing up in teams of two, one person, who is designated the leader, offers the top of the left wrist to the partner; the designated follower places his or her right palm on the leader’s left wrist. The leader then is instructed to walk around the room freely and move the left limb up and down to provide a mild challenge for the partner to follow. The follower, without grasping, must stay attached to the leader’s arm.

Many interesting things emerge from this simple exercise. First, beginning students often quickly forget Tai Chi principles when “attached” to another person. That happens even with my regular reminders to walk in a relaxed manner and maintain good posture, feel the feet on the ground, and keep breathing. The quality of their movements is far from meditative.

Afterward, some students say they had difficulty staying centered and grounded because of the physical challenges of unpredictable movements and concerns about balance. More frequently, they describe psychological challenges. Some students honestly admit it was very hard not to be in control, while others feel very uncomfortable taking the responsibility for leading. In both cases, the students recognize the challenge of staying mindful while being engaged with another. I suggest students learning Push Hands actively look for situations outside of class that challenge their ability to remain centered, or to play a leadership or subordinate role, at work or at home.

In practicing even the simplest of interactive Tai Chi exercises, like the one above, it becomes very obvious that learning is more than just physical. Touch and joined

movement can catalyze emotional and psychosocial awareness. Angus Clark, a highly regarded Tai Chi teacher in England, nicely describes how partner work can raise awareness and help transform emotions and behaviors:

Tai Chi is not a form of psychotherapy, but it reaches the art of dealing with emotions on a physical level. For example, partner practice encourages people to honestly look at themselves. The shape or position of the body and its effectiveness in dealing with a difficult situation, such as an incoming push, is a good indicator of a person’s stance in life. In exchanges of pushing and yielding, receiving and giving, there are moments when partners of over- or under-assertiveness become clear. Tai Chi guides people toward achieving a balance.⁹

Social Support and Interaction

“My favorite thing to do with my two boys, Brian (age 9) and Jacob (age 6) is to wrestle with them,” says Andy, a 43-year-old attorney, who has gone to Tai Chi class two or three times a week for the past two years. “Practicing Tai Chi has allowed me to play more actively with them. My older son now has a brown belt in karate, which is an outer martial art. I’m trying to give him a hint of the inner strength of Push Hands.

“It’s fun to push around with someone. I remember that feeling from when I was a kid, now that I have my own kids. It’s energizing and good exercise, too. The challenge of Push Hands is to draw on your energy and the other person’s energy at the same time. When you go back to the Tai Chi form, it brings your form up to another level, and makes it more of a martial practice.”

Safe, playful physical interactions in Tai Chi classes may help compensate for what may be a shortage of touching in contemporary Western society, particularly in America. One study observed sets of American, French, and Puerto Rican friends in coffee shops over the course of an hour to determine how frequently they made physical contact. Friends in the United States tend to touch each other an average of only twice an hour, whereas French friends touch 110 times, and Puerto Rican friends touch 180 times.¹⁰ As discussed in earlier chapters, being a member of a community, like a Tai Chi school, provides important social support. The depth and intimacy of social interactions may become even greater when you regularly share physical contact with a Tai Chi partner.

However, know that even the simplest interactive exercises must be introduced in the context of safety and respect. Students may have undisclosed histories of abuse, trauma, or physical injuries, which make some aspects of interactive Tai Chi feel unsafe. For example, in my basic introductory Tai Chi classes, before starting an interactive exercise, I let everyone know what we are going to do and what the students can expect from the interactions. I emphasize that, like solo exercises that may cause discomfort, participation in interactive exercises is optional and sitting out is just fine.

The 70-percent rule of Tai Chi applies equally to emotional and social effort as it does to physical strain. For similar reasons, my more advanced Push Hands classes are limited to students who have been part of our community for an extended period, and we rarely allow “outsiders” to participate. We are not hiding training secrets, but respecting the intimacy of interactive Tai Chi work. Through long-standing relationships in class, students have the time to get to know each other. This time affords them a level of trust and familiarity, which is critical for our approach to partner work.

Partner work is a rich component of Tai Chi that goes well beyond martial training. It informs your understanding and depth of solo Tai Chi training, has health benefits, and can be applied to everyday activities. As you explore Tai Chi’s interactive principles in everyday life, you may well see changes in activities as varied as how you open doors, walk down crowded, busy streets, and interact with colleagues and family members. ☺



Footnotes

1. Some books that include significant discussion on interactive Tai Chi include: Cheng Man Ch’ing et al., *Cheng Tzu’s Thirteen Treatises on T’ai Chi Ch’uan* (Berkeley: Blue Snake Books, 1993); Stuart Olson, *Tai Chi Sensing Hands* (Prescott Valley, Calif.: Unique Publications, 1999); Wolfe Lowenthal, *There Are No Secrets: Professor Cheng Man Ch’ing and His T’ai Chi Chuan* (Berkeley: North Atlantic Books, 1993); T. T. Liang, *T’ai Chi Ch’uan for Health and Self-Defense: Philosophy and Practice* (New York: Vintage, 1977); Rick Barrett, *Taijiquan: Through the Western Gate* (Berkeley: Blue Snake Books, 2006); Bruce Kumar Frantzis, *The Power of Internal Martial Arts and Chi: Combat and Energy Secrets of Ba Gua, Tai Chi and Hsing-I* (Berkeley: Blue Snake Books, 2007); Yang Jwing-Ming, *Tai Chi Chuan Martial Applications: Advanced Yang Style Tai Chi Chuan* (Boston: YMAA Publication Center, 1996).
2. For example, see R. Dunbar, “The Social Role of Touch in Humans and Primates: Behavioural Function and Neurobiological Mechanisms,” *Neuroscience and Biobehavioral Reviews* 34 (2010): 260–268; A. Gallace and C. Spencer, “The Science of Interpersonal Touch: An Overview,” *Neuroscience and Biobehavioral Reviews* 34 (2010): 246–259; K. M. Grewen et al., “Effects

of Partner Support on Resting Oxytocin, Cortisol, Norepinephrine, and Blood Pressure before and after Warm Partner Contact,” *Psychosomatic Medicine* 67 (2005): 531–538; K. C. Light et al., “More Frequent Partner Hugs and Higher Oxytocin Levels Are Linked to Lower Blood Pressure and Heart Rate in Premenopausal Women,” *Biological Psychology* 69 (2005): 5–21.

3. Cabrera and L. Colosi, “The World at Our Fingertips: The Connection between Touch and Learning,” *Scientific American* (September 2010).
4. K. Huang, “PianoTouch: A Wearable Haptic Piano Instruction System for Passive Learning of Piano Skills,” *12th IEEE International Symposium on Wearable Computers* (2008): 41–44;
5. J. Bluteau et al., “Haptic Guidance Improves the Visuo-Manual Tracking of Trajectories,” *PLoS One* 3, no. 3 (2008): e1775.
6. W. W. Tsang et al., “Trunk Position Sense in Older Tai Chi Sword Practitioners,” *Hong Kong Physiotherapy Journal* 27, no. 1 (2009): 55–60;
7. B. H. Jacobson, “The Effect of T’ai Chi Chuan Training on Balance, Kinesthetic Sense, and Strength,” *Perception and Motor Skills* 84, no. 1 (1997): 27–33.
8. C. E. Kerr et al., “Tactile Acuity in Experienced Tai Chi Practitioners: Evidence for Use Dependent Plasticity as an Effect of Sensory-Attentional Training,” *Experiential Brain Research* 188, no. 2 (2008): 317–22.
9. Y. Zhou, “The Effect of Traditional Sports on the Bone Density of Menopausal Women,” *Journal of Beijing Sport University* 27 (2004): 354–60.
10. H. C. Chen et al., “The Defense Technique in Tai Chi Push Hands: A Case Study,” *Journal of Sports Science* 28, no. 14 (2010): 1595–1604;
11. L. H. Wang et al., “Ground Reaction Force and Postural Adaptation of the Push Movement in Tai Chi,” *Journal of Biomechanics* 40 (2007): S430.
12. Angus Clark, *The Complete Illustrated Guide to Tai Chi. A Practical Approach to the Ancient Chinese Movement for Health and Well-being* (Boston: Element Books, 2000).
13. S. M. Jourard, *Healthy Personality: An Approach from the Viewpoint of Humanistic Psychology* (New York: Macmillan, 1974).

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