



Tai Chi to promote stability and balance

Description

Martial art may improve balance by strengthening proprioception in people

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Tai Chi is a martial art and exercise that promotes stability and balance. Until recently, evidence of Tai Chi as an exercise for balance has been strictly anecdotal, in the words of practitioners over the last 400 years. It has also been evident in the feet of millions of elderly Chinese (some in their 90's) who practice and swear by the daily practice of Tai Chi.

In the last 23 years of my evolution as a Tai Chi teacher, I have noticed my own balance improve. My students have also reported improvements as well. Recent scientific research explains why practicing Tai Chi has such a profound effect on stability and balance. This research has come by way of testing the proprioception of Tai Chi practitioners.

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Proprioception is defined as an unconscious perception of movement and spatial orientation arising from proprioceptors in the body connected to the semicircular canals of the inner ear. Proprioceptors are in the muscles, tendons, and joints. They reside in the feet, ankles, knees and other areas. As a person ages they lose their strength and their posture begins to weaken. Also, their system of proprioception starts to wane resulting in falls. According to statistics, "41% of falls in long-term care homes were attributed to incorrect weight shifting. Experts also say that a slower walking speed and a shorter stride length are common in people who fall." ¹

Tai Chi students learn from their first class how to shift their weight. They also learn about sinking into their hips, keeping their back straight, their shoulders relaxed, their head up, and eyes on the horizon. Tai Chi also helps with the stability and gait of elderly because it trains them to move deliberately. The following studies appear to have found that Tai Chi may indeed impact positively on the stability, posture, and proprioception of test participants.

In one study comparing 16 Tai Chi participants and 16 control participants (doing their regular activities), Tai chi



participants were evaluated on control, ankle joint proprioception and perception of joint movement sensation. “Experts found that Tai Chi may offer a unique benefit, in that it is beneficial in enhancing ankle joint proprioception.”²

“A number of cross-sectional and longitudinal studies have provided positive evidence that Tai Chi practitioners not only have better cardiorespiratory function, but also perform better in balance control, flexibility, and muscle strength tests.”³

Wolf et al reported that Tai Chi reduced multiple falls by as much as 47.5%.⁴

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Another study comparing 21 long-term Tai Chi practitioners, 20 runners-swimmers, and 27 sedentary controls found that, “the Tai Chi practitioners had superior knee and ankle proprioception to the sedentary controls and better ankle proprioception to the runner-swimmers.”⁵

Another Chinese study comparing 20 Tai Chi practitioners, 20 people in a proprioception exercise group, and a 20-person control group. “Results found the Tai Chi group and the proprioception to be on par in terms of results. Both groups fared better than the sedentary control group in improving ankle proprioception.”⁶

Tai Chi holds promise also for both Parkinson’s disease and Knee Osteoarthritis

In a recent study published in the New England Journal of Medicine, researchers studied 195 Parkinson’s patients. The group was divided into 3 equal groups: Tai Chi training, resistance training, and stretching. “Results showed that the Tai Chi group outperformed both of the other groups. Tai Chi also lowered the incidence of falls compared with the stretching group. Effects of the Tai Chi training were maintained 3 months after the intervention. The researchers concluded that Tai Chi helps to mitigate falls in patients suffering with mild-to-moderate Parkinson’s disease.”⁷

I believe that the Parkinson’s group benefited from the deliberate movements emphasized by the Tai Chi training and the development of proprioception developed in the feet, ankles, and knees. The fact that the effect lasted 3 months after the intervention may indicate that Tai Chi has an effect on the brain plasticity of participants. This effect also warrants more study and indicates that those suffering from Parkinson’s could benefit from continuous practice of Tai Chi.

Tai Chi may show some promise for those with Knee Osteoarthritis. “Research conducted in 2013 found moderate improvement in knee proprioception in people with severe knee osteoarthritis after 12 weeks of practice. Experts reported that more studies are needed.”⁸

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All of these studies are interesting in that they report that Tai Chi may have a potent effect on developing proprioception in people of all ages. Also, Tai Chi may be effective with severe medical illnesses such as Parkinson’s and Knee Osteoarthritis. What I find most interesting is the effect of Tai Chi training on the proprioception of the elderly and the possibility of fall-prevention.

There are difficulties, however, in teaching Tai Chi to the elderly. A traditional Tai Chi class requires the student to practice the movements and commit them to memory. This is difficult for some seniors who may have memory problems or more serious dementia. I have remedied this problem for my students by distilling Tai Chi down to a few movements and I have preserved the weight shifting in the exercise I teach. This way it is easier



for my seniors to follow me and to get the benefits of the exercise.

Experts have found that Tai Chi may have a positive effect on proprioception for all ages including the elderly. For some seniors, learning Tai Chi in the traditional way works just fine. For other seniors suffering from memory loss or those who are fragile, we must adapt the exercise to help them gain the maximum benefit.

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3. Br J Sports Med 2004;38:50-54
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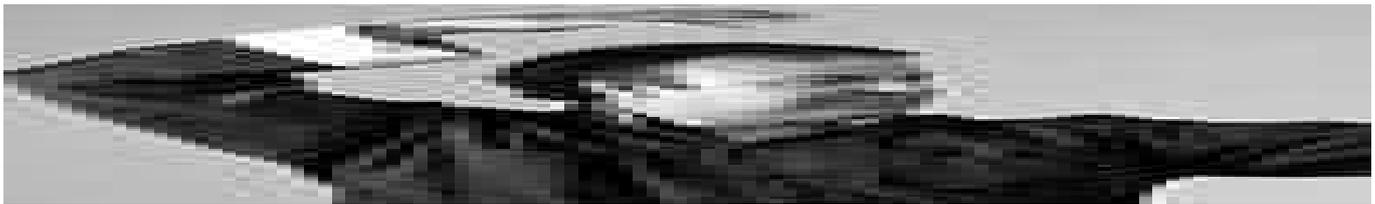
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