



# Standing Firm Fitness

A Proactive Approach to Aging

Better Balance for You

All about balance matters

By Chris Netto

Falls in the 65-and-over population costs more than \$20 million annually in the United States. More than 60% of falls happen in the home. Falls and movement dysfunctions are costly in many ways. Too often fall may cause hip fractures or an injury requiring a hip or knee replacement. As we age it becomes more important to include mindful functional balance activities into to a well-rounded fitness program at least twice a week to enhance ease and proficiency of daily living activities and help reduce risk of prevent life-threatening fall.

## **What is balance?**

Balance is defined by keeping center of gravity (COG) over base of support (BOS). The body's COG or point, around which weight is evenly distributed over base of support, is about 2 inches in front of spine at an elevation near the first and second sacral joint (navel high) in the pelvis in most individuals. The weight is centered over the ball of the foot and big toe when standing with soft knees. When the person's line of gravity (LOG), a theoretical line passing through the COG dissecting the body or torso into the four quadrants) falls outside the BOS, the more difficult balance becomes. Hence holding an upright posture during movement facilitates balance.

Thus Balance is related to the body's ability to control postural alignment of the four quadrants or torso in a variety of circumstances and requires frequent deliberate practice. Shifting the body's COG over the BOS during a variety of movement activities helps an individual to adjust to a variety of postures to enable individuals to feel stable under different circumstances.

Generally people feel less confident about stepping to the rear. Individuals with poorer balance tend to overuse their quadriceps muscles and track knees to far forward placing undue stress on the knees. This results in movement patterns that underutilize the hamstrings and gluteal muscles.

Paraphrased from "[Activities tools for balance](#)" article by Susan Dawson-Cook, MS at [www.e-afaa.com](http://www.e-afaa.com)

See on reverse side; How Tai Chi works



## How Tai Chi Works

No matter what forms of tai chi practiced, if specific tai chi principles are incorporated into tai chi practice, the result will be better balance and reduced falls.

### ***Movement control***

Tai chi movements are slow, smooth and continuous, helping to strengthen internal muscles, like the deep stabilizers that support and strengthen the spine. Additionally, tai chi practitioners move against a gentle resistance to build full muscular strength. Slow and smooth movements calm the mind, helping to reduce falls resulting from sudden movements that lead to significant blood pressure drop, especially in elder people taking medication that can cause change of blood pressure.

### ***Weight transference***

Tai chi practitioners are mindful of transferring weight with each step, helping to improve mobility, coordination and balance. This, in addition to emphasis on upright and supple posture, further strengthens muscles.

### ***Integration of mind and body***

Tai chi is an internal art, which stresses the integration—and balance—of mind and body. Tai chi practitioners focus, calm their minds, and loosen and relax their joints and ligaments.

A number of studies indicate that being confident results in less falls, since the fear of falls increases the risk of falling. Practicing a mind-body exercise, such as tai chi, builds confidence, thus alleviating the fear of falling.

Instructors training for all of Dr. Lam's Tai Chi for health programs include the understanding of these principles. Instructors then work with participants to incorporate them into real applications.

### ***Extra Benefit: Reduction of the Burden of Chronic Conditions.***

Investing in tai chi programs can have cost savings in other areas. As the practice of tai chi improves many aspects of health, it can also be an ideal preventive intervention. The U.S. National Institute of Health's National Center for Complementary and Alternative Medicine suggests that people practice tai chi for a variety of health-related purposes, such as:

- For benefits associated with low-impact, weight-bearing, aerobic exercise.
- To improve physical condition, muscle strength, coordination, and flexibility.
- To improve balance and decrease the risk for falls, especially in elderly people.
- To ease pain and stiffness—for example, from osteoarthritis.
- To improve sleep.
- For overall wellness.

The largest study about the practice of tai chi by people with arthritis, published in the Arthritis Care and Research Journal, found that the Tai Chi for Arthritis program not only reduced pain, but also improved the quality of life. It has also been found to improve standing balance for people with strokes as well as six out of eight measurements of quality of life for older adults. A study, recently accepted to be published in the Journal of Alternative and Complementary Medicine, followed 82 older women divided into tai chi and control groups. After six months, those practicing tai chi significantly increased knee extensor endurance and bone mineral density and had less fear of falling than the control group.