

# Qigong Exercise and Tai Chi in Cancer Care

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Cancer survivors experience long-term physical and psychological morbidities resulting from cancer and the treatment, which compromise their quality of life, physical mobility, and sense of well-being.<sup>[1]</sup> It is estimated that there will be more than 20 million cancer survivors in the USA by 2026.<sup>[2]</sup> It is vital to incorporate into daily practice a variety of holistic approaches to manage common cancer-related physical and psychological symptoms. These approaches may offer survivors flexible choices to address their own experiences and enhance their quality of life and spiritual well-being. An improved quality of life is a predictor of a longer life.<sup>[3]</sup>

Qigong exercise and Tai Chi have been practiced in Asia for thousands of years to promote the health of the human mind, body, and spirit. In traditional Chinese medicine, it is believed that the “Qi,” a vital energy, is the key to keeping the body healthy. Illness or injury disrupts the harmony of vital energy circulation.<sup>[4]</sup> Qigong exercise emphasizes the cultivation of this vital energy to promote self-healing. Tai Chi is a martial art with an emphasis on self-defense. Although the emphasis of Qigong exercise and Tai Chi may vary somewhat, both share the commonality of slow, gentle movements, breathing regulation, and meditation. These approaches have been shown to improve muscle strength, balance, functional ability, depression, anxiety, spiritual well-being, and quality of life.<sup>[5-7]</sup> Qigong exercise and Tai Chi can be additive or

alternative approaches that have been demonstrated to slow the development of disability, reduce fatigue, and improved both quality of life and a sense of well-being.<sup>[8]</sup>

## Slow the Development of Disability and Reduce Fatigue

Approximately one-third of cancer survivors experience cancer-related fatigue up to 6 years following treatment due to persistent physical symptoms, depression, and anxiety. Those with chronic fatigue are more likely to be physically inactive, which often leads to high levels of disability.<sup>[9]</sup> Such disability impacts survivors’ daily living and their roles at work and in their social life. Decreased muscle strength and physical inactivity are predictors of long-term fatigue in old cancer survivors.<sup>[10]</sup> Daily physical activity is a recommended nonpharmacological approach to managing cancer-related fatigue.<sup>[11]</sup> Aerobic exercise improves health-related quality of life.<sup>[3]</sup> The gentle exercise modality that Qigong exercise and Tai Chi provide offers an alternative option for increasing the level of physical activity and reducing cancer-related fatigue in cancer survivors who may not be able to tolerate the recommended level of aerobic or resistance exercise. Health Qigong, a form of Qigong exercise, has been tested for acceptability in older American adults with chronic illness and mild-to-moderate physical decline. The older participants

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of the study reported that Qigong exercise was not physically hard to practice and was applicable to older people with various levels of physical ability.<sup>[12]</sup> A meta-analysis of 18 randomized controlled trials reported that Qigong exercise and Tai Chi had significant positive effects on fatigue reduction and depression, major contributor of chronic fatigue, and were comparable with the active control interventions.<sup>[13]</sup>

The loss of muscle strength in the lower and upper extremities is common before and after chemotherapy.<sup>[14]</sup> Muscle strength in patients with breast cancer decreased up to 25% in the lower extremities and 12%–16% in the upper extremities.<sup>[14]</sup> The effects of Qigong and Tai Chi on muscle strength, flexibility, and balance have been well reported. A meta-analysis of 1282 older adults aged 62–83 years, including cancer survivors, from 14 randomized controlled trials was conducted to assess the effects of Qigong exercise on physical ability, functioning, and balance. The findings showed that the distance of the 6-minute walk test for older adults in the Qigong exercise group significantly improved when compared with the groups with daily walking and usual care. The favorable effects of Qigong exercise on handgrip strength, functioning, and balance were also reported.<sup>[6]</sup> This improved functioning and balance may be a result of strengthening toe plantar and lower extremity muscles through the inherent training feature of Qigong movements, especially the horse stance (a standing position while bending the knees) and bouncing on the toes.<sup>[5]</sup> Bouncing on the toes is similar to the heel raise exercise used in physical therapy to improve toe plantar flexor strength and power.<sup>[15]</sup> In addition, horse stance may enhance the strength of the lower extremity muscles and stretch the gastrocnemius muscle to increase the range of motion of the ankle.<sup>[15]</sup> The ankle flexibility and strength of the toe plantar muscle have been proven to be highly associated with balance and functioning in older adults.<sup>[16]</sup> Improved physical and functional well-being is positively correlated with the quality of life as well.<sup>[17]</sup>

## Spiritual Well-Being: Improve Quality of Life and Sense of Well-Being

Qigong exercise and Tai Chi are not only able to improve physical and functional well-being, but they can also promote spiritual well-being. Spirituality is an integration of the mind, body, and spirit.<sup>[18]</sup> Spiritual well-being has been found associated with fewer depressive symptoms and a predictor of psychological well-being in older adults.<sup>[19]</sup> Meditation as part of Qigong exercise and Tai Chi may promote the relaxation response<sup>[20]</sup> and decrease sympathetic nervous system activity,<sup>[21]</sup> contributing to a greater sense of spiritual well-being.<sup>[5,22]</sup> A study of an 8-week Health Qigong exercise program reported that group

exercise and meditation promoted the spiritual well-being of the older participants and enhanced their inner peace and feelings of rejuvenation and well-being.<sup>[12]</sup> Such inner peace is significantly associated with spiritual well-being, a better quality of life, and a sense of well-being.<sup>[23,24]</sup>

## Qigong and Tai Chi Instructors

Finding Tai Chi and Qigong (TQ) instructors and assessing their competence can be a daunting task. Yet, it is essential to determine the quality and competency of these instructors for use with cancer survivors and associated chronic illnesses. The American Cancer Society and the American College of Sports Medicine recognized how essential it is for exercise trainers to be knowledgeable about cancer, the side effects, and physical abilities of cancer patients in order to effectively design appropriate exercise programs.<sup>[25]</sup> These efforts led to a standardized program with certification.<sup>[26]</sup> Realizing a similar need for Tai Chi and Qigong instructors, the Medical Tai Chi and Qigong Association was formed to address competency and develop certification and accreditation guidelines.<sup>[27]</sup> Important to this work is the goal of improving health outcomes, specifically the certification of medical TQ instructors.<sup>[27]</sup>

## Conclusion

Qigong exercise and Tai Chi have great potential in cancer care for improving physical ability, reducing cancer-related fatigue, and enhancing the quality of life and spiritual well-being. The creation, work, and contributions of the nonprofit organization, the Medical Tai Chi and Qigong Association, have resulted in guidelines which are an important resource for health-care providers in identifying qualified TQ instructors for their patients.

## Conflicts of interest

There are no conflicts of interest.

## References

1. Loscalzo M, Clark K, Pal S, Pirl WF. Role of biopsychosocial screening in cancer care. *Cancer J* 2013;19:414-20.
2. American Cancer Society. *Cancer Treatment & Survivorship Facts & Figures 2016-2017*. Atlanta: American Cancer Society; 2016.
3. Mishra SI, Scherer RW, Snyder C, Geigle PM, Berlanstein DR, Topaloglu O. Exercise interventions on health-related quality of life for people with cancer during active treatment. *Cochrane Database Syst Rev* 2012;8:CD008465.
4. McCaffrey R, Fowler NL. Qigong practice: A pathway to health and healing. *Holist Nurs Pract* 2003;17:110-6.
5. Chang PS, Knobf MT, Oh B, Funk M. Physical and psychological effects of Qigong exercise in community-dwelling older adults: An exploratory study. *Geriatr Nurs* 2018;39:88-94.
6. Chang PS, Knobf T, Oh B, Funk M. Physical and psychological health outcomes of Qigong exercise in older adults:

- A systematic review and meta-analysis. *Am J Chin Med* 2019;47:301-22.
7. Liu XY, Gao J, Yin BX, Yang XY, Bai DX. Efficacy of ba Duan Jin in improving balance: A study in Chinese community-dwelling older adults. *J Gerontol Nurs* 2016;42:38-46.
  8. Klein PJ, Schneider R, Rhoads CJ. Qigong in cancer care: A systematic review and construct analysis of effective Qigong therapy. *Support Care Cancer* 2016;24:3209-22.
  9. Jones JM, Olson K, Catton P, Catton CN, Fleshner NE, Krzyzanowska MK, *et al.* Cancer-related fatigue and associated disability in post-treatment cancer survivors. *J Cancer Surviv* 2016;10:51-61.
  10. Villaseñor A, Ballard-Barbash R, Baumgartner K, Baumgartner R, Bernstein L, McTiernan A, *et al.* Prevalence and prognostic effect of sarcopenia in breast cancer survivors: The HEAL study. *J Cancer Surviv* 2012;6:398-406.
  11. Kummer F, Catuogno S, Perseus JM, Bloch W, Baumann FT. Relationship between cancer-related fatigue and physical activity in inpatient cancer rehabilitation. *Anticancer Res* 2013;33:3415-22.
  12. Chang PS, Knobf MT, Funk M, Oh B. Feasibility and acceptability of Qigong exercise in community-dwelling older adults in the United States. *J Altern Complement Med* 2018;24:48-54.
  13. Wayne PM, Lee MS, Novakowski J, Osypiuk K, Ligibel J, Carlson LE, *et al.* Tai Chi and Qigong for cancer-related symptoms and quality of life: A systematic review and meta-analysis. *J Cancer Surviv* 2018;12:256-67.
  14. Klassen O, Schmidt ME, Ulrich CM, Schneeweiss A, Potthoff K, Steindorf K, *et al.* Muscle strength in breast cancer patients receiving different treatment regimes. *J Cachexia Sarcopenia Muscle* 2017;8:305-16.
  15. Long L, Jackson K, Laubach L. A home-based exercise program for the foot and ankle to improve balance, muscle performance and flexibility in community dwelling older adults: A pilot study. *Int J Phys Med Rehabil* 2013;1:2.
  16. Menz HB, Morris ME, Lord SR. Foot and ankle characteristics associated with impaired balance and functional ability in older people. *J Gerontol A Biol Sci Med Sci* 2005;60:1546-52.
  17. Trombetti A, Reid KF, Hars M, Herrmann FR, Pasha E, Phillips EM, *et al.* Age-associated declines in muscle mass, strength, power, and physical performance: Impact on fear of falling and quality of life. *Osteoporos Int* 2016;27:463-71.
  18. Meraviglia MG. Critical analysis of spirituality and its empirical indicators. Prayer and meaning in life. *J Holist Nurs* 1999;17:18-33.
  19. Koenig HG, George LK, Titus P. Religion, spirituality, and health in medically ill hospitalized older patients. *J Am Geriatr Soc* 2004;52:554-62.
  20. Cahn BR, Polich J. Meditation states and traits: EEG, ERP, and neuroimaging studies. *Psychol Bull* 2006;132:180-211.
  21. Motivala SJ, Sollers J, Thayer J, Irwin MR. Tai Chi Chih acutely decreases sympathetic nervous system activity in older adults. *J Gerontol A Biol Sci Med Sci* 2006;61:1177-80.
  22. Buttle H. Measuring a journey without goal: Meditation, spirituality, and physiology. *Biomed Res Int* 2015;2015:891671.
  23. Cheng Q, Liu X, Li X, Wang Y, Mao T, Chen Y. Improving spiritual well-being among cancer patients: Implications for clinical care. *Support Care Cancer* 2019. doi: 10.1007/s00520-019-4636-4. [Epub ahead of print].
  24. Al-Natour A, Al Momani SM, Qandil AM. The relationship between spirituality and quality of life of Jordanian women diagnosed with breast cancer. *J Relig Health* 2017;56:2096-108.
  25. Schmitz KH, Courneya KS, Matthews C, Demark-Wahnefried W, Galvão DA, Pinto BM, *et al.* American college of sports medicine roundtable on exercise guidelines for cancer survivors. *Med Sci Sports Exerc* 2010;42:1409-26.
  26. American College of Sports Medicine. ACSM/ACS Certified Cancer Exercise Trainer. American College of Sports Medicine; 2019. Available from: <https://www.acsm.org/get-stay-certified/get-certified/specialization/cet>. [Last accessed on 2019 Jun 16].
  27. Oh B, Yeung A, Klein P, Larkey L, Ee C, Zaslowski C, *et al.* Accreditation standard guideline initiative for Tai Chi and qigong instructors and training institutions. *Medicines (Basel)* 2018;5. pii: E51.