

# **The Science of Tai Chi and Qigong as Whole-Person Health Conference—list of pertinent findings for TCV**

## **Age-related issues**

- Randomized controlled trials demonstrated that 12 weeks of Baduanjin (8 Brocades qigong) could significantly alleviate depressive symptoms in older adults, compared with newspaper reading or cognitive training (Hector W. H. Tsang et al)

## **Brain-related issues**

- Tai chi is a good dual-task practice (it shifts our center of balance, we move our hands, we feel, we're concerned with how it looks and we need to remember the sequence)—dual-task gait performance is a reliable marker of brain health that has direct functional relevance to everyday life (Montero-Odasso et al, JAMA Neurology, 2017) and tai chi is uniquely positioned to be particularly beneficial to dual-task walking performance in older adults (Manor et al, J Am Geriatr Soc, 2014)
- Tai chi and qigong help us maintain our performance and sustain our reserves (Alvaro Pascual-Leone, Harvard Medical School)
- Tai chi and other mind-body therapies have profound neuroplastic, neuroprotective and anti-aging effects in addition to improved whole-person health—including improved wellbeing, resilience to stress and emotional regulation (Helen Lavretsky, University of California, Los Angeles)

## **Cancer-related issues**

- Tai chi and qigong are strongly recommended for cancer-related fatigue (Julienne E. Bower et al JCO 42, 2456-2487, 2024)
- Those participating in virtual integrative medicine—including tai chi—reported reduction in fatigue, depression and physical symptoms, as well as (Jun Mao, Memorial Sloan Kettering):
  - substantial reduction in anxiety and stress after classes (84%), and extreme satisfaction with the experience (96%)
  - Reduction in hospital stay days (130 to 17)
  - Reduction in patients hospitalized (13 to 4)
  - Mean number of hospital days per patient (10 to 4.25)
- Those participating in virtual integrative medicine—including tai chi—experienced a 16% improvement in two-year overall survival (Jun Mao, Memorial Sloan Kettering)
- Tai chi and qigong are associated with a 25% reduction in risk of cancer-related death (Wang et al 2013; Am J Epidemiol)
- In patients with advanced lung cancer a randomized clinical trial found that tai chi and aerobics improved survivorship at one year, but only tai chi significantly reduced mortality (Naomi Takemura, PhD, Denise Shuk Cheung, PhD, Daniel Yee Tak Fong, PhD; Anne Wing Mui Lee MD; Tai-Chung Lam MBBS; James Chung-Man Ho, MD; Tsz Yeung Kam, MBChB; Jeannie Yin Kwan Chik, MBBS, Chia-Chin Lin PhD)

- High levels of social support reduced relative risk for mortality by 25 percent (Pinquart M, Duberstein PR, Associations of social networks with cancer mortality: a meta-analysis. Critical Reviews in Oncology/Hematology, 2010 Aug. 75(2):122-37.)

### **Cardiovascular issues**

- 94.9% primary studies reported at least one positive result in favor of tai chi (Yang GY et al, 2021)
  - Physical performance (76.2%)
  - Psychological outcomes (23.6%)
  - QOL (21.6%)
  - Health-related events--falls, fractures, stroke (8.3%)
  - Safety (7.2%)
  - Compliance (2.5%)
  - Cognitive function (2.3%)
  - Sleep quality (1.0%)

### **Chronic pain**

- Yang-style tai chi and a mindful wellness protocol demonstrated improvements in Gulf War veterans (pain, depression, anxiety, mindfulness and PTSD symptoms) and were sustained at a nine-month follow-up (Barbara Niles, Mental Health Outcomes Associated with Holistic Interventions for Veterans with Gulf War Illness and Chronic Pain: Tai Chi and Wellness Promotion)
- 350 adults with chronic low back pain performed tai chi for 12 weeks virtually, 2x/week and experienced improved function, sleep and quality of life, plus decreased pain; improvements sustained one month after treatment ended (Yang Yang, Ph.d., Virtual Tai Chi and Qigong for Low Back Pain: Results of a Pragmatic Randomized Controlled Trial)

### **Depression**

- Tai chi participants demonstrated greater improvement than just health education in the severity of depression (Lavretsky et al 2011):
  - Resilience
  - Energy and psychomotor retardation
  - Physical functioning
  - Executive cognitive function attention and memory

### **Fall prevention**

- Tai chi training reduces the rate of falls by 19%, and the number of people who experience falls by 20% (Sherrington et al, Cochrane Library, 2019; Chen et al)
- Tai chi is effective for reducing falls for older adults because it involves sensory input, spinal reflexes, force output and supraspinal control (which uses attention, working memory, inhibition and planning)
- In a randomized clinical trial of tai chi vs. strength training for fall prevention after chemotherapy in older, postmenopausal women cancer survivors, tai chi reduced injurious falls and improved balance (GET FIT, Ma et al in prep):
  - TC reduced injurious falls and improved balance
  - TCQ trended toward better balance

- TCQ slows people down (moving more mindfully)

### **Menopause-related issues**

- Menopausal women who did tai chi in 45-60 min sessions, 3x/week, for 12 weeks experienced (Ruth Taylor-Piliae, University of Arizona, College of Nursing):
  - Lower BP
  - Better sleep quality
  - Less depression
  - Better health-related QOL
  - Better glucose and lipid profiles
  - BMD improved
  - Fewer hot flashes

### **Mindful movement**

- Physical exercise that is non-competitive; non-judgmental; meditative; has a mental focus on muscular movement, with low to moderate muscular activity, conscious breathing, a focus on alignment and energy awareness has the following positives (Abbott, Lavretsky; Psychiatric Clinics 2013):
  - Promotes relaxation
  - Reduces somatic symptoms and benefits anxiety, depression, BP and recovery for immune-mediated diseases
  - Reduces inflammatory markers
  - Reduces stress hormones
  - Increases peak oxygen uptake
  - Promotes neuroplastic changes—increased grey matter volume (Tao et al 2017)
- 5-10 min/day practice synchronizes breathing and brain activity (Herrero et al, Journal of Neurophysiology, 2018):
  - Changes autonomic system balance (parasympathetic system tone up, sympathetic system down)
  - Has direct neuroplastic effects on brain (changes stay after 1-2 months of practice)
  - Improves lung capacity, cardiorespiratory health, oxygenation
  - Decreases inflammation, improves cognition and attention, decreases stress response and reactivity