

## TAI CHI

***Are you 65 or older? Get your yoga, Tai Chi, dancing, gardening, multi-movement workout classes or sports at least 3 times a week.***

Tai Chi Chuan is a mind-body-spirit exercise that, while it focuses on producing an inner calmness, is also considered to be a moderate-intensity, multicomponent type of exercise which incorporates movements for balance, strength and flexibility.(1-5) Because Tai Chi works on balance and mobility, it reduces the risk of falls and fear of falling in older people. (4, 6, 7) There are a number of styles of Tai Chi including Yang, Sun and Chen style, with Yang style (the style taught on Goldster) being more effective in helping prevent falls.(8) The more often Tai Chi is practised, the more likely it is to help prevent falls.(8)

Tai Chi not only has physical benefits, but cognitive benefits as well.(9) Tai Chi promotes the area of cognitive health called executive functioning which involves planning, decision making, problem solving, action sequencing, task assignment and organization.(10) Tai Chi is also good for memory and overall cognitive health, and even more so when combined with cognitive interventions, like memory training and social support.(10-12)

Tai Chi has been shown to have a significantly beneficial effect on quality of life.(13) It also has positive impacts on mental wellbeing including reduced stress, symptoms of anxiety or depression and mood disturbance, and increased self-esteem.(14, 15) Tai chi in the community has been show to increase sense of social support.(16) Tai Chi has also been shown to improve sleep quality.(15, 17, 18)

### **GOLDSTER** Points and Evidence Levels for this Activity

Domain	Impact Strength	Points	Information on Evidence	Evidence Type	Evidence Level
Cognitive	Medium	2	In people aged 60 and older, Tai Chi has been shown to be associated with a medium impact on cognition particularly related to executive function and memory function.(10-12, 19)	Systematic reviews	Moderate
Physical	Medium	2	In people aged 60 and older, Tai Chi has a medium impact in reducing the number of people who experience falls and risk of falls.(4, 6) In people aged 65 and older, varied multicomponent exercise has been shown to have a medium impact on improving functional capacity and preventing falls.(2, 3)	Systematic reviews, Guideline	High, Moderate
Emotional	Medium	2	In adults, Tai Chi has been shown to have a medium impact on mental wellbeing including reduced stress, symptoms of anxiety or depression and mood disturbance, and increased self-esteem. (14, 15)	Review, Systematic review	Moderate

## Guidelines on Physical Activity

The UK Chief Medical Officers' and the World Health Organization guidelines:(2, 3)

- If you are aged 65 or older, as part of your weekly physical activity, you should do varied multicomponent physical activity that:
  - Focuses on functional balance and strength training
  - At moderate or greater intensity
  - On 3 or more days a week.
- New to exercise? Start by doing small amounts and gradually, over time, increase how often, how intensely and for how long you exercise.

For those age 65 years and over or with any physical difficulties, be as physically active as your abilities allow and adjust how much effort you put into physical activity based on your fitness and strength levels.

## References

1. US Department of Health and Human Services. Physical Activity Guidelines for Americans, 2nd edition. Washington, DC: U.S.2018 [Available from: [https://health.gov/sites/default/files/2019-09/Physical\\_Activity\\_Guidelines\\_2nd\\_edition.pdf](https://health.gov/sites/default/files/2019-09/Physical_Activity_Guidelines_2nd_edition.pdf).
2. World Health Organization. WHO guidelines on physical activity and sedentary behaviour. Geneva: World Health Organization; 2020 [Available from: <https://www.who.int/publications/i/item/9789240015128>.
3. Department of Health and Social Care LCWG, Department of Health Northern Ireland, and the Scottish Government,. UK Chief Medical Officers' Physical Activity Guidelines. 2019 [Available from: <https://www.gov.uk/government/publications/physical-activity-guidelines-uk-chief-medical-officers-report>.
4. Sherrington C, Fairhall NJ, Wallbank GK, Tiedemann A, Michaleff ZA, Howard K, et al. Exercise for preventing falls in older people living in the community. Cochrane Database Syst Rev. 2019;1(1):Cd012424. <https://doi.org/10.1002/14651858.CD012424.pub2>
5. Miller SM, Taylor-Piliae RE. Effects of Tai Chi on cognitive function in community-dwelling older adults: a review. Geriatr Nurs. 2014;35(1):9-19. <https://doi.org/10.1016/j.gerinurse.2013.10.013>
6. Gillespie LD, Robertson MC, Gillespie WJ, Sherrington C, Gates S, Clemson L, et al. Interventions for preventing falls in older people living in the community. Cochrane Database of Systematic Reviews. 2012(9). <https://doi.org/10.1002/14651858.CD007146.pub3>
7. Hackney ME, Wolf SL. Impact of Tai Chi Chu'an practice on balance and mobility in older adults: an integrative review of 20 years of research. J Geriatr Phys Ther. 2014;37(3):127-35. [https://journals.lww.com/jgpt/Fulltext/2014/07000/Impact\\_of\\_Tai\\_Chi\\_Chu\\_an\\_Practice\\_on\\_Balance\\_and.5.aspx](https://journals.lww.com/jgpt/Fulltext/2014/07000/Impact_of_Tai_Chi_Chu_an_Practice_on_Balance_and.5.aspx)
8. Huang ZG, Feng YH, Li YH, Lv CS. Systematic review and meta-analysis: Tai Chi for preventing falls in older adults. BMJ Open. 2017;7(2):e013661. <http://dx.doi.org/10.1136/bmjopen-2016-013661>
9. Nyman SR. Tai Chi for the Prevention of Falls Among Older Adults: A Critical Analysis of the Evidence. J Aging Phys Act. 2021;29(2):343-52. <https://doi.org/10.1123/japa.2020-0155>
10. Wayne PM, Walsh JN, Taylor-Piliae RE, Wells RE, Papp KV, Donovan NJ, et al. Effect of tai chi on cognitive performance in older adults: systematic review and meta-analysis. Journal of the American Geriatrics Society. 2014;62(1):25-39. <https://doi.org/10.1111/jgs.12611>
11. Li F, Wang L, Qin Y, Liu G. Combined Tai Chi and cognitive interventions for older adults with or without cognitive impairment: A meta-analysis and systematic review. Complement Ther Med. 2022;67:102833. <https://doi.org/10.1016/j.ctim.2022.102833>

12. Liu F, Chen X, Nie P, Lin S, Guo J, Chen J, et al. Can Tai Chi Improve Cognitive Function? A Systematic Review and Meta-Analysis of Randomized Controlled Trials. *Journal of alternative and complementary medicine (New York, NY)*. 2021;27(12):1070-83. <https://doi.org/10.1089/acm.2021.0084>
13. Wang D, Wang P, Lan K, Zhang Y, Pan Y. Effectiveness of Tai chi exercise on overall quality of life and its physical and psychological components among older adults: a systematic review and meta-analysis. *Braz J Med Biol Res*. 2020;53(10):e10196. <https://doi.org/10.1590/1414-431X202010196>
14. Wang C, Bannuru R, Ramel J, Kupelnick B, Scott T, Schmid CH. Tai Chi on psychological well-being: systematic review and meta-analysis. *BMC Complement Altern Med*. 2010;10:23. <https://doi.org/10.1186/1472-6882-10-23>
15. Weber M, Schnorr T, Morat M, Morat T, Donath L. Effects of Mind-Body Interventions Involving Meditative Movements on Quality of Life, Depressive Symptoms, Fear of Falling and Sleep Quality in Older Adults: A Systematic Review with Meta-Analysis. *Int J Environ Res Public Health*. 2020;17(18). <https://doi.org/10.3390/ijerph17186556>
16. Koren Y, Leveille S, You T. Tai Chi Interventions Promoting Social Support and Interaction Among Older Adults: A Systematic Review. *Res Gerontol Nurs*. 2021;14(3):126-37. <https://doi.org/10.3928/19404921-20210325-02>
17. Fank F, Pereira FDS, Dos Santos L, de Mello MT, Mazo GZ. Effects of Exercise on Sleep in Older Adults: An Overview of Systematic Reviews and Meta-Analyses. *J Aging Phys Act*. 2022;30(6):1101-17. <https://doi.org/10.1123/japa.2021-0444>
18. Du S, Dong J, Zhang H, Jin S, Xu G, Liu Z, et al. Taichi exercise for self-rated sleep quality in older people: a systematic review and meta-analysis. *Int J Nurs Stud*. 2015;52(1):368-79. <https://doi.org/10.1016/j.ijnurstu.2014.05.009>
19. Wu Y, Wang Y, Burgess EO, Wu J. The effects of Tai Chi exercise on cognitive function in older adults: A meta-analysis. *Journal of Sport and Health Science*. 2013;2(4):193-203. <https://doi.org/10.1111/jgs.12611>

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**CHAIR-BASED EXERCISE**

Do whatever small amounts of physical activity you can do, as often as you can do it.  
Every minute of movement counts. Move more and move often.

**Chair-based Exercise**

Chair-based exercise is a supportive and safe way to exercise for people who may feel less able to take part in the standing and floor-based exercise classes or who have difficulty moving around or are concerned about their balance. Even when done seated, chair-based exercise can really have a positive impact on physical and mental health.(1) Chair-based exercise has been shown to strengthen arm and leg strength.(1) Numerous types of exercises can be adapted to seated or supported options include aerobic or weight exercises, as well as Yoga and Tai Chi.(1) Chair-based exercises that use resistance bands have shown some good improvements in strength and balance in people over 80 years old and in those living in long term care facilities who also saw improvements in activities of daily living, lung capacity, handgrip strength, upper limb strength, lower limb strength, upper body flexibility, lower body flexibility, dynamic balance and reduced frailty.(2, 3) For people living in long term care facilities, chair-based resistance band exercise also reduced depression and improved sleep quality.(2)

Most of the studies relating to chair-based exercise have been done on people aged 65 and older who are living in long-term care facilities, are frail or may have been recently discharged from hospital. It has been shown in a systematic review (SR) that some chair-based exercise programmes did show some slight improvement in cardiovascular fitness, mobility and function and mental health in older frail people without any harmful effects.(4) In a randomised controlled trial (RCT), the seated exercise group had a reduced fall risk compared to those who just received social visits after being discharged from hospital.(5)

During a chair-based exercise class, participants remain seated in a sturdy upright chair or in their own mobility aid like a wheelchair. Someone doing the class may experience this as light to moderate exercise depending on their own ability and level of fitness. As the intensity of the exercise increases for a person, so will their heart rate, breathing rate and use of energy ("calorie burn"). Light exercises may include slow walking, gentle seated exercises or slow, supported movement. Some people may experience this as light exercise which may not usually cause substantial increase in the person's heart rate or breathing. Moderate exercise would increase the heart and breathing rate and may cause someone to sweat.

**Guidelines**

The UK Chief Medical Officers' and the World Health Organization guidelines recommend:(6, 7)

- Doing some physical activity is better than doing none; even small amounts can benefit one's health.
- New to exercise? Start by doing small amounts and gradually, over time, increase how often, how intensely and for how long you exercise.
- For those age 65 years and over or with physical difficulties, be as physically active as your abilities allow and adjust how much effort you put into physical activity based on your fitness levels.

If ability allows, ultimately aim to get at least 150 minutes of moderate cardiovascular activity each week; or 75 minutes of vigorous activity each week.

## GOLDSTER★ Points and Evidence Levels for this Activity

Domain	Impact Strength	Points	Information on Evidence	Evidence Type	Evidence Level
Cognitive	None	0	There is no available evidence that chair-based exercise has been proven to benefit cognitive function.	-	None
Physical	Medium	2	In older people, chair-based exercises have shown a moderate improvement in hand grip, arm strength and leg strength.(1) In older people who are frail, chair-based exercise has shown slight improvement in muscle-strength, cardiovascular fitness, mobility and function.(4) Chair-based exercise reduced risk of falls for older people discharged from hospital.(5) In older people in long-term care facilities, chair-based resistance band exercise has shown significant improvements in activities of daily living, lung capacity, handgrip strength, upper limb muscle endurance, lower limb muscle endurance, upper body flexibility, lower body flexibility, dynamic balance.(2) Both multimodal and resistance band chair-based exercise have shown reduced frailty in women living in long term facilities.(3)	Systematic Reviews, Randomised Controlled Trials	Low, Medium
Emotional	Mild	1	Evidence on chair-based exercise has shown slight improvement in mental health in older people who are frail.(4, 5) For people living in long term care facilities, chair-based resistance band exercise has been shown to reduce depression and improve sleep quality.(2)	Randomised Controlled Trial, Systematic Reviews	Low

## References

1. Klempel N, Blackburn NE, McMullan IL, Wilson JJ, Smith L, Cunningham C, et al. The Effect of Chair-Based Exercise on Physical Function in Older Adults: A Systematic Review and Meta-Analysis. *Int J Environ Res Public Health*. 2021;18(4).  
<https://doi.org/10.3390/ijerph18041902>
2. Efendi F, Tonapa SI, Has EMM, Ho KHM. Effects of chair-based resistance band exercise on physical functioning, sleep quality, and depression of older adults in long-term care facilities: Systematic review and meta-analysis. *Int J Nurs Sci*. 2023;10(1):72-81.  
<https://doi.org/10.1016/j.ijnss.2022.12.002>
3. Furtado GE, Carvalho HM, Loureiro M, Patrício M, Uba-Chupel M, Colado JC, et al. Chair-based exercise programs in institutionalized older women: Salivary steroid hormones, disabilities and frailty changes. *Exp Gerontol*. 2020;130:110790.  
<https://doi.org/10.1016/j.exger.2019.110790>
4. Anthony K, Robinson K, Logan P, Gordon AL, Harwood RH, Masud T. Chair-based exercises for frail older people: a systematic review. *Biomed Res Int*. 2013;2013:309506.  
<https://doi.org/10.1155/2013/309506>

5. Vogler CM, Sherrington C, Ogle SJ, Lord SR. Reducing risk of falling in older people discharged from hospital: a randomized controlled trial comparing seated exercises, weight-bearing exercises, and social visits. Arch Phys Med Rehabil. 2009;90(8):1317-24.  
<https://doi.org/10.1016/j.apmr.2009.01.030>
  6. World Health Organization. WHO guidelines on physical activity and sedentary behaviour. Geneva: World Health Organization; 2020 [Available from: <https://www.who.int/publications/i/item/9789240015128>].
  7. Department of Health and Social Care LCWG, Department of Health Northern Ireland, and the Scottish Government,. UK Chief Medical Officers' Physical Activity Guidelines. 2019 [Available from: <https://www.gov.uk/government/publications/physical-activity-guidelines-uk-chief-medical-officers-report>].
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