

PICO Question: Is Tai Chi or Yoga more effective in improving Berg Balance scores in community dwelling adults over 65?

Citation	Purpose, Study Design	Number of subjects, subject information	Outcome Measures, Time Frame	Intervention	Results	Recommendation	Conclusion
<p>Tatum NG, Bradley RC, Igel C. Therapeutic yoga to improve balance and floor transfer in older adults. Topics in Geriatr Rehab. 2011; 27: 134-141.</p>	<p>To investigate the effectiveness of yoga to improve balance and floor transfer in older adults.</p> <p>Longitudinal case study</p>	<p>N=45</p> <ul style="list-style-type: none"> • Community dwelling • 58-85 yrs old • 37 female, 8 male • New to yoga 	<ul style="list-style-type: none"> • Rate of Perceived Fitness & Mobility Scale • Dorsiflexion ROM • Seated knee extension • BBS • Floor Transfer Ability Scale • Transfer Difficulty Scale <p>• 1 month prior • 1 week prior • 1 week following • 3 years following</p>	<ul style="list-style-type: none"> • 90 mins/wk, 13 wks • 30 min yoga DVD 5x/wk • Glenmore Ageless Therapeutic Yoga 	<ul style="list-style-type: none"> • Statistically significant improvements in all variables 	<p>Physical activity is important to reduce falls in older adults.</p> <p>This form of yoga can help older adults make improvements in functional mobility</p>	<p>An RCT would be valuable for this study.</p> <p>Additional studies are needed.</p> <p>The creators of this yoga program were also the authors of the study.</p>
<p>Lui H, Frank A. Tai Chi as a balance improvement exercise for older adults: a systematic review. J Geriatr Phys Ther. 2010; 33: 103-109.</p>	<p>Identify most common tai chi exercise parameters and outcome measures</p> <p>Systematic Review</p>	<p>N = N/A</p> <p>Inclusion criteria</p> <ul style="list-style-type: none"> • Longitudinal studies • Tai chi had to be intervention • Subjects >60 years old • Outcomes were combination of: strength, balance, activity performance, fear of falling and rate of falling 	<p>Measures included:</p> <ul style="list-style-type: none"> • dynamic balance • functional performance • muscle strength • flexibility • Others <p>• Some performed pre/post-test</p>	<p>Great variation</p> <ul style="list-style-type: none"> • 5-20 min warm-up • 5-10 min cool-down • Short duration, high frequency, long sessions 	<p>Studies showed significant improvements:</p> <ul style="list-style-type: none"> • Static balance • single leg stance • tandem stance • dynamic balance • fear of falling 	<p>Tai chi is a useful tool in improving both static and dynamic balance and ultimately, functional mobility</p>	<p>Additional studies should be conducted to determine the most beneficial protocol for a tai chi program.</p> <p>There was great variation between studies included in this review.</p>

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Zettergren KK, Lubekski JM, Viverito JM. Effects of a yoga program on postural control, mobility, and gait speed in community-living older adults: a pilot study. J Geriatr Phys Ther. 2011; 34: 88-94.	To look at the effects of a group yoga program on functional balance in community dwelling older adults Case-control	N = 14 (8 completed program) • mean age is 84 • All female • All community dwelling	• 4-Square Step Test • BBS • TUG • Administered prior to involvement in yoga • Immediately following conclusion	• 80 mins Kripalu yoga • 10 mins body awareness • 10 mins warm-up • 50 mins poses • 10 mins cool down	• BBS and fast gait speed increased significantly	This type of yoga may be a good recommendation to community dwelling older adults for improving dynamic balance	• This would be for older adults for increased physical activity as well as socialization. • Poses should not be performed without supervision if at risk for falls • Increased follow-up time should be investigated • Larger sample size, more functional measures • This sample may have had ceiling effect for BBS
Lin M-R, Hwang H-F, Wang Y-W, Chang S-H, Wolf SL. Community based Tai Chi and its effect on injurious falls, balance, gait, and fear of falling in older people. Phys Ther. 2006; 86: 1189-1201.	To see if a community-based tai chi program is effective in reducing injurious falls in adults over 65 Quasi-experimental	N = 1,200 • There was no demographic information included in this study • The participants were chose based on age over 65 and living in certain villages	Measures included: • Geriatric Depression Scale • Mini-mental State Exam • Older Adults Resources and Services ADL Scale • Performance-Oriented Assessment of Mobility Problems test Balance test given immediately before and after intervention	• Falls prevention education • Chen-style tai chi • 10 min warm-up • 45 min tai chi • 5 min cool down	• Number of injurious falls decreased but were not statistically significant • POAMB changed between tai chi practitioners and control significantly	Community-based tai chi may be beneficial for improving balance but not necessarily injurious falls. Falls education also seemed to be beneficial based on the reduced number of injurious falls in the control group	Huge reduction in number of falls in control group may have affected significance of outcomes in treatment group. This was attributed to the possibility that the control group reduced “risky” activity after learning what put them at risk for falls.

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Schmid AA, Van Puymbroeck M, Kocejka DM. Effect of a 12-week yoga intervention on fear of falling and balance in older adults: a pilot study. Arch Phys Med Rehabil. 2010; 91; 576-83.	Will a 12 week yoga intervention improve fear of falling and balance in adults over 65? Cohort	N = 14 • Average age 78.36 • 14/14 white • 13/14 college educated • 8/14 married • 12/14 at least “good” health status • 2/14 used assistive device	• Illinois FoF Measure • “Are you afraid of falling?” • BBS • Senior Functional Fitness Test • Baseline, 6 weeks, 12 weeks	• 75 min 2x/w for 12w • Difficulty increased throughout the study	• 6% decrease in Illinois FoF score, not significant • Dynamic balance did not change • Static balance increased significantly • 34% increase in lower body flexibility	If a patient needs increased flexibility or static balance, yoga would be a great program This is NOT an effective program for reducing fear of falling	Subjective description of FoF may have changed after participants became more aware of falls risks. There is the possibility of recall bias when recalling falls Poor sample population
Li F, Harmer P, Fisher KJ, McAuley F. Tai Chi: improving functional balance and predicting subsequent falls in older persons. Med Sci Sports Exerc. 2004; 36: 2046-2052.	Does improved functional balance, through tai chi, relate to reduced number of falls in elderly people? RCT	N = 256 • Avg. age = 77.48 • 77 male • 179 female • All lived in Portland, OR	• BBS • DGI • Functional reach • Baseline • 3 months • 6 months (at end of intervention) • 6 month follow-up	• 26 weeks • 60 min exercise 3x/w for 6 months • 5-10m warm up • 30 min tai chi • 5-10 min cool down • Music accompaniment	• Tai chi group significantly better in balance • Significant improvement for TC group at baseline to followup • Downward trend for functional balance at 6 month follow up • TC group had slower decline	I would recommend my patients use tai chi for balance improvement Even after they stop tai chi, their decline in balance will be slower then if they did not participate in TC	Assessors were not blinded to intervention allocation No muscular strength measures Did not use more involved balance measures like limits of stability, sensory organization, etc.
Brown KD, Kaziol JA, Lotz M. A Yoga-based exercise program to reduce the risk of falls in seniors: a pilot and feasibility study. J Altern Complement Med. 2008; 14: 454-457.	Can yoga reduce risk for falls in older adults? Pilot study	N = 22 • Mean age = 82 • 6 males • 16 females • Mean # of medications = 4.4 • 19/22 exercise regularly	• BBS • Single leg stance test • Activities-specific Balance Confidence Scale • Baseline, 3 months	• 45 mins yoga for 3 months	• 14/22 increased BBS • 13/22 Increased ABC • 15/22 increased single leg stance • These results were significant	Yoga may reduce the risk for falls but based on this study, it is impossible to determine if this particular intervention is effective due to limited information	This study lacked information such as why the subjects dropped out, more specific information on the intervention Small sample size

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<p>Hakim, RA, Kotroba E, Cours J, Teel S, Leininger PM. A cross sectional study of balance-related measures with older adults who participated in Tai Chi, yoga, or no exercise. Phys Occup Ther Geriatr. 2010;28:63-73.</p>	<p>Do people who participate in yoga, tai chi, or no exercise have higher balance related scores?</p> <p>Cross-sectional</p>	<p>N = 52</p> <p>Tai Chi group:</p> <ul style="list-style-type: none"> • Age 74.09 • # comorbidities = 2.80 • Activity level 11.66 • 19 F, 2 M • Falls in last year = 3 • Near falls in last year = 5 <p>Yoga group:</p> <ul style="list-style-type: none"> • Age 73.09 • # comorbidities = 2.81 • Activity level 15.27 • 11F 0M • 2 falls • 1 near fall <p>No exercise:</p> <ul style="list-style-type: none"> • Age 76.20 • comorb. = 4.3 • Activity level = 10.73 • 15F, 5M • 12 falls • 9 near falls 	<ul style="list-style-type: none"> • Fullerton Advanced Balance Scale • Multidirectional Reach Test • Timed Floor Transfer • Activities-Specific Balance Confidence Scale <p>• Administered 1 time during study</p>	<ul style="list-style-type: none"> • No protocol • Participants were only required to participate in tai chi, yoga, or no exercise in a program of their choice • Participants were already enrolled in their respective groups upon data collection 	<ul style="list-style-type: none"> • Tai Chi and yoga groups scored higher than no exercise • TC significantly higher than no-exercise on FAB • TC sig. higher than yoga and no-exercise in all directions of MDRT • Yoga sig. higher than no-exercise in MDRT to left and right • No significant difference between groups in ABC, SLS and TFT scales 	<p>Involvement in some form of exercise is more beneficial for preventing falls than no exercise at all. I would recommend that all my patients become involved in a structured exercise program, especially one focused on falls prevention</p>	<ul style="list-style-type: none"> • More research is needed in this area, especially for the most effective protocol for tai chi or yoga • More research is needed to find the most effective way to measure balance confidence

This is the additional articles found for the Capstone project. Many of the articles were found using combinations of Tai Chi and key words necessary to find articles relevant to my goal such as “community dwelling”, “older adults”, “long-term care”, “Parkinson’s Disease” etc.

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<p>Chang JY, Tsai PF, Beck C, Hagen JL, Huff DC, Anand KS, Roberson PK, Rosengren KS, Beuscher L. The effect of tai chi on cognition in elders with cognitive impairment. <i>Medsurg Nursing</i>. 2011; 20:63-69.</p>	<p>To investigate the effect of tai chi on cognition in elders with cognitive impairment.</p> <p>Pilot-study</p>	<p>N = 11</p> <ul style="list-style-type: none"> • 10 Female • Age 85 • MMSE 23 • Community dwelling 	<ul style="list-style-type: none"> • Mini-mental state examination • Digit Symbol-Coding score on the WAIS-III • Digit Span on WAIS-III • Hopkins Verbal Learning Test • SF-36 <p>• Prior to treatment, following treatment</p>	<ul style="list-style-type: none"> • 15 weeks • Sun-Style TC for Arthritis (12 forms) • 2x/w 20-40 mins per session 	<ul style="list-style-type: none"> • Attendance significantly relates to changes in cognition • No significant difference in pre-/post-test cognition • Dose-response relationship • Significant difference between low and high dose groups in MMSE and Digit Symbol-Coding scores 	<p>Tai chi is a feasible intervention for people with cognitive deficits. Tai chi may be used to help improve or maintain cognitive status.</p>	<p>People with cognitive impairments can learn tai chi in this setting and tai chi may help slow the progression of cognitive decline.</p>

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Chen KM, Chen WT, Want JJ, Huang MF. Frail elders' views of tai chi. <i>J Nurs Research</i> . 2005;13:11-19.	Explore frail older adults' perspective on tai chi (i.e. movements, frequency/duration, practice preferences). Cross-sectional Descriptive study	N = 40 • Long-term care • Age ~77 • 55% male	Since this was a study to gather information on people's perspective of an intervention, no outcome measures were necessary	Questions related to: • Difficult tai chi forms • Easy tai chi forms • Frequency • Duration • Best time of day • Size of group • Best location • Type of TC instructor	• Difficult - complicated hand gestures, strenuous lower body movements • Manageable - large, slow motions • Prefer 2x/w, 30-60 minutes • Prefer 10-20 people per group • Early morning or after afternoon nap • Outside or on a wide, flat floor with comfortable temperature • Instructor should be experienced, gentle, considerate, clear expression, patience.	Design a tai chi intervention in the image of the preferences of those who will be participating in the program.	A tai chi intervention should be designed to elicit the potential benefits but in a way that participants will enjoy and become engaged. The style should be simple and easy to learn, last about 30-60 minutes 1-2x/w, in a comfortable location. The instructor should be aware of participants' needs, provide rest breaks and offer the class at a time best suited for the participants.
Chen KM, Li CH, Lin JN, Chen WT, Lin HS, Wu HC. A feasible method to enhance and maintain the health of elderly living in long-term care facilities through long-term, simplified tai chi classes. <i>J Nurs Research</i> . 2007;15:156-163.	To test the effectiveness and feasibility of employing an audiovisual approach to practice STEP in long-term elderly care facilities Quasi-experimental	N = 51 • Long-term care • 100% male (this was in a home for military veterans) • Age 77.7 • Better physical health than is normally see in LTC residents	• Physical health (Cardio-resp. function, BP, BMI, LE flexibility, balance, hand-grip strength) • Mental health (sleep quality) • chinese SF-36 • Before intervention • 6 mo after start • 12 mo after start	• 15-20 per group • 3x/w, 50 mins • 2-5 min breaks • Warm-up • 12 easy tai chi movements • Cool-down • 6 months instructor-led • 6 months video-led	Significant changes: • Cardio-respiratory • Blood pressure • lower body flex. • Hand-grip strength • Quality of sleep	The STEP program may not be challenging enough for this population. Its lack of deep knee bends and other activities aimed to increase lower extremity strength and balance were omitted from this program.	These participants were healthier than the average LTC resident and therefore results may not be accurate to a typical population. Some changes in outcomes measures were positive but did not reach statistical significance.

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Chen KM, Lin JN, Lin HS, Wu HC, Chen WT, Li CH, Lo SK. The effects of a simplified tai-chi exercise program (STEP) on the physical health of older adults living in long-term care facilities: a single group design with multiple time points. <i>Inter J Nurs Studies</i> . 2008; 45:501-507.	To test the effects of a newly-developed Simplified Tai-Chi Exercise Program (STEP) on the physical health of older adults who live in long-term care facilities. Single group	<ul style="list-style-type: none"> •N = 51 • Age 77.6 • Male (because study was in a veterans' home) 	<ul style="list-style-type: none"> • Cardio-respiratory function • BP • Balance •Hand-grip strength •Lower-body flexibility • physical health actualization <ul style="list-style-type: none"> • 3 pre-tests, 1 mo apart. • 4 post-tests at 1 mo, 2 mo, 3 mo, 6 mo 	<ul style="list-style-type: none"> • 3x/w • 50 min • 6 months • Warm-up (9 movements) • 12 movements • Cool-down 	<ul style="list-style-type: none"> • Significant change in hand-grip strength • Significant decrease in LE flexibility before intervention 	Several studies have shown the benefits of TC for balance and other measures. I would still recommend this intervention but ensure it is appropriate for the target population before implementing the program.	<ul style="list-style-type: none"> •Inaccurate portrayal of typical LTC residents. • Steady increases in LE flexibility but did not reach pre-test level • Less stepping/leg movements
Farrell CF. Tai chi adapted: assisted living, long-term care, and nursing homes. <i>Home Health Care Management & Practice</i> . 2004;16:487-493.	Bridge classic Chinese health care systems with current complementary/alternative medical point of view. Commentary	N/A	•N/A	•N/A	N/A	Tai chi can be adapted to meet the needs of many populations. This article also offers suggestions to potential instructors of how to develop an effective program and address clients.	Certain portions of this article are important for describing the background of tai chi and its umbrella term qigong. It is not meant to be a research article, although it does share information on other valuable resources.

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Frick KD, Yung JY, Parrish JM, Narrett MJ. Evaluating the cost-effectiveness of fall prevention programs that reduce fall-related hip fractures in older adults. <i>JAGS</i> . 2010;58:136-141.	To model the incremental cost-utility of seven interventions reported as effective for preventing falls in older adults. Literature review	N/A	<ul style="list-style-type: none"> • Number of hip fractures from falls • Quality adjusted life years (QALY) lost to hip fractures • Healthcare costs • Types of interventions (specifically TC) • Costs of fall prevention interventions 	•N/A	<ul style="list-style-type: none"> •Vitamin D supplements was the cheapest intervention • Tai chi was most effective for the cost • Only one RCT in their Cochrane review 	The use of tai chi to prevent falls that may result in hip fractures would likely be effective.	Investing in group tai chi programs may be very cost effective in preventing falls resulting in hip fractures. Because classes do cost money to the individual, it is likely groups will diminish in size.
Kim HD, Kim TY, Jae HD, Son ST. The effects of tai chi based exercise on dynamic postural control of Parkinson's Disease patients while initiating gait. <i>J Phys Ther Sci</i> . 2011;23:265-269.	To investigate the effects of tai chi based exercise on dynamic postural control when people with mild or moderate PD initiate gait. 1 group, pre-test/post-test	N = 10 <ul style="list-style-type: none"> • Age 78.5 yo • Mild-mod PD 	<ul style="list-style-type: none"> • 1 week prior to treatment • 1 week following treatment • UPDRS motor subscale • MMSE • Ground reaction forces measured • Center of pressure trajectory 	<ul style="list-style-type: none"> • 12 weeks • 3x/w • 60 mins (10 min warm-up, 40 min intervention, 10 min cool-down) 	<ul style="list-style-type: none"> • Significant difference in A-P & M-L displacement of COP 	<ul style="list-style-type: none"> • People with PD can benefit from tai chi and this is a good program to help them increase dynamic stability. • I would recommend this to my patients for physical activity at a community based level. 	<ul style="list-style-type: none"> • People with PD showed improvements in postural control during gait initiation. • This is likely to help them reduce their risk for falls. • Tai chi is a good form of physical activity and exercise for people with PD.

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Li F, Harmer P, McAuley E, Duncan TE, Duncan SC, Chaumeton N, Fisher KJ. An evaluation of the effects of tai chi exercise on physical function among older persons: a randomized controlled trial. <i>Ann Behav Med.</i> 2001;23:139-146.	<ul style="list-style-type: none"> To extend our knowledge of the health benefits of Tai Chi by examining its influence on physical function in older adults. RCT with repeated measures design 	N = 48 <ul style="list-style-type: none"> Age 72.84 y.o. 88% female Avg education 14.476 years Most could do heavy housework but not outdoor activities, likely due to gender Both groups had similar demographics 	<ul style="list-style-type: none"> SF-20 Physical function measure: questions on various dimensions of daily living activities Both groups: <ul style="list-style-type: none"> Baseline 12 weeks 24 weeks 	<ul style="list-style-type: none"> Yang-style tai chi 60 min/d 2x/w 6 months 	<ul style="list-style-type: none"> Sig. diff at midterm and final Tai chi group 2x or higher to be not limited in functional outcomes. Higher percentage of TC group changed “limited” to “not limited” in mod to vigorous activities 	I would recommend older adults participate in tai chi classes to improve physical function.	“The important finding of this study is that physical functioning, an important index of health-related quality of life, can be enhanced through Tai Chi.”
Li F, Harmer P, Fisher JK, Xu J, Fitzgerald K, Vongjaturapat N. Tai chi-based exercise for older adults with Parkinson’s Disease: a pilot-program evaluation. <i>Journal of Aging and Physical Activity.</i> 2007;15:139-151.	To provide preliminary evaluation of the feasibility, safety, and efficacy of a newly developed Tai Chi-based exercise program for older adults with Parkinson’s Disease (PD). One-group pre-/post-test pilot study	N = 17 <ul style="list-style-type: none"> Age 71.15 y.o. Mild/mod PD Stable medication Community dwelling 	<ul style="list-style-type: none"> Exit interview 50-ft speed walk TUG Functional reach test <ul style="list-style-type: none"> 1-2 days prior to intervention 1 day after end of intervention 	<ul style="list-style-type: none"> Yang style 90 min/d 5 days 10-min warmup 50-min tai chi 10-min cool down Periodic breaks 	<ul style="list-style-type: none"> Significant improvements in all outcome measures Positive feedback about classes and its ability to improve functional mobility 	I would recommend this course or a course similar to it for people with mild to moderate PD to help improve their functional mobility.	This study indicates that a tai chi course would be beneficial for older adults with idiopathic PD to improve functional mobility. This a good study to add to the limited but growing body of evidence to support the efficacy of tai chi in the PD population.

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Li F, Harmer P, Fitzgerald K, Eckstrom E, Stock R, Maddalozzo G. Tai Chi and postural stability in patients with Parkinson's disease. <i>NEJM</i> . 2012;366:511-519.	To determine if tai chi is more effective in improving postural stability in limits-of-stability tests than resistance-based exercise or low-impact stretching (control). RCT	N = 195 • Age ~69 • Mild/mod PD • Most report poor to good health	• Limits of stability • FRT • TUG • motor UPDRS • # falls • Baseline • 6 months • 3 month follow up	• 60 min/d • 2x/w • 24 weeks • Tai Chi • Strength training • Stretching (control)	• Tai chi had better outcomes than other groups in maximum excursion • Tai chi outperformed in secondary measures	Tai chi could be used for people with PD for treatment of postural stability	Tai chi is an effective treatment for people with PD. It is better than stretching or strength-training for improving postural stability.
Thornton EW, Sykes KS, Tang WK. Health benefits of Tai Chi exercise: improved balance and blood pressure in middle-aged women. <i>Health Promotion International</i> . 2004;19:33-38.	Collects information on changes in blood pressure and balance in women who are not physical active and have not participated in a tai chi class. Cohort	N = 34 (17 in Tai Chi, 17 in control) • Age ~47 y.o. • Body weight ~55 Kg • BP 122/79 • No sig diff between groups	• Functional Reach test • Average BP in sitting after 5 min of rest	• Yang style • 60 min/d • 3 d/w • 12 weeks • 20 min warm up • 30 min Tai Chi • 10 min cool down	• Tai chi group had a sig improvement in BP • No changes in control group's BP • Sig balance improvement in TC group, not in control	This is a valuable study to support the use of Tai Chi for women with poor balance or who wish to lower their blood pressure.	Tai chi is not only beneficial for older adults groups but also younger groups of people.
Taylor-Piliae RE, Coull BM. Community-based Yang-style Tai Chi is safe and feasible in chronic stroke: a pilot study. <i>Clin Rehabil</i> . 2011;26:121-131.	To examine the safety and feasibility of a 12-week Tai Chi intervention among stroke survivors. Pilot-study	N = 28 • Age 69 y.o. • 48% women • 94% at least 3 mo post-stroke • Community dwelling • Randomized to Tai Chi or usual care	• Short Physical Performance Battery • SF-36 • Pittsburgh Sleep Quality Index • Center for Epidemiological Studies Depression scale • Baseline and following conclusion	• 60 mins/d • 3 d/w • 12 w • Chair close by for rest • 20 min warm up • 30 min Tai Chi • 10 min cool down	• TC group reports gain of personal benefits, would recommend to others, higher overall satisfaction • Balance scores better for TC group (not sig) • All other physical scores better for "usual care" group	This may be an effective intervention for people who wishes to improve balance.	Better physical measures should be used to avoid ceiling effects. This is a safe intervention for stroke survivors and seems to be an intervention participants would adhere to.

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Venglar M. Casr report: Tai Chi and Parkinsonism. <i>Physiotherapy Research International</i> . 2005;10:116-121.	To describe the effects of an 8-week Tai Chi class on two patients: one with Parkinson's Disease, the other with multiple system atrophy. Case report	N = 11 • Age 63 y.o. • Mild PD • Frequent loss of balance	• TUG • ABC • FRT	• Yang style • 60 min/d • 1 d/w • 15 w	• Decrease in TUG time and # of steps • Participants reports TC makes her think how to start moving again during freezing episodes	TC is a safe form of physical activity for people with PD for both balance and developing techniques to overcome freezing episodes.	This participant showed improvements dynamic balance. If the intervention period had been longer it is likely she would have developed better balance and balance confidence.
Voukelatos A, Cumming RG, Lord SR, Rissel C. A randomized controlled trial of tai chi for the prevention of falls: the central sydney tai chi trial. <i>JAGS</i> . 2007;55:1185-1191.	To determine the effectiveness of a 16-week community-based tai chi program in reducing falls and improving balance in people aged 60 and older. RCT	N = 702 • Age 69 y.o. • 84% female • community dwelling	• # of falls • Sway (using swaymeter) • Leaning balance • Lateral stability • Baseline • 16 weeks • 24 weeks	• 1 hr/d • 1d/w • 16 w	• Sway on the foam mat was statistically significant. • 50% relative risk reduction of 2+ falls in tai chi group • Falls for tai chi < control	I would recommend tai chi as a falls prevention intervention for older adults	Although there were many styles and instructors involved in this study the results are common that tai chi is beneficial to improve balance and reduce falls for older adults.

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<p>Wolf SL, Sattin RW, Kutner M, O'Grady M, Greenspan AI, Gregor RJ. Intense Tai Chi exercise training and fall occurrences in older, transitionally frail adults: a randomized, controlled trial. <i>J Am Geriatr Soc.</i> 2003;51:1693-1701.</p>	<p>To determine whether an intense tai chi (TC) exercise program could reduce the risk of falls more than a wellness education (WE) program in older adults meeting criteria for transitioning to frailty.</p>	<p>N = 311</p> <ul style="list-style-type: none"> • 291 female • 11 male • Lived in congregate living facilities 	<ul style="list-style-type: none"> • FRT • Elements of BBS • SLS (eyes open/closed) • 3 Consecutive chair stands • 10-meter walk test • Fear of falling (quarterly) • Medical assessments i.e. height, weight, etc. <p>• Baseline</p>	<p>Tai Chi:</p> <ul style="list-style-type: none"> • 60 min/d • 2x/w • Progressing to 90 min/d <p>WE:</p> <ul style="list-style-type: none"> • 1 hr/w • Instruction about falls prevention; exercise and balance; diet and nutrition; pharmacological management; legal issues relevant to health; changes in body function; mental health issues. 	<ul style="list-style-type: none"> • TC group had significantly lower risk for falls • Instructors report that it took about 3 months for participants to be able to stand upright from using an assistive device 	<p>Even in a frail population tai chi seems to be effective in reducing falls.</p>	<p>This is an effective intervention for frail older adults.</p>