J Am Geriatr Soc. 2005 Jul;53(7):1168-78. Related Articles, Links

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Reduction in fear of falling through intense tai chi exercise training in older, transitionally frail adults.

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Objectives: To determine whether an intense tai chi exercise program could reduce fear of falling better than a wellness education (WE) program in older adults who had fallen previously and meet criteria for transitioning to frailty. Design: Cluster-randomized, controlled trial of 48 weeks' duration. Setting: Ten matched pairs of congregate living facilities in the greater Atlanta area. Participants: Sample of 291 women and 20 men, aged 70 to 97. Measurements: Activity-related fear of falling using the Activities-Specific Balance Confidence Scale (ABC) and the Fall Efficacy Scale at baseline and every 4 months for 1 year. Demographics, time to first fall and all subsequent falls, functional measures, Centers for Epidemiologic Studies Depression Scale, medication use, level of physical activity, comorbidities, and adherence to interventions. Results: Mean ABC was similar in both cohort groups at the time of randomization but became significantly higher (decreased fear) in the tai chi cohort at 8 months (57.9 vs 49.0, P<.001) and at study end (59.2 vs 47.9, P<.001). After adjusting for covariates, the mean ABC after 12 months of intervention was significantly greater in the tai chi group than in the WE group, with the differences increasing with time (mean difference at 12 months=9.5 points, 95% confidence interval=4.8-14.2, P<.001). Conclusion: Tai chi led to a significantly greater reduction in fear of falling than a WE program in transitionally frail older adults. The mean percentage change in ABC scores widened between tai chi and WE participants over the trial period. Tai chi should be considered in any program designed to reduce falling and fear of falling in transitionally frail older adults.

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Exercise and cancer recovery.

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Disease and cancer treatment-related side effects such as decreased energy level, muscle weakness, and declines in functional status and body mass have been well documented. There is evidence that exercise, such as low intensity aerobics walking, Tai Chi, or cycling, results in an overall decrease in fatigue levels over the course of cancer treatment. Additionally, there is evidence that regular physical activity or exercise can decrease emotional stress, blood pressure, the duration of neutropenia, thrombocytopenia, and pain. Exercise also has been shown to increase quality of life and improve the maximal oxygen uptake during exertion, sleep patterns, and cognition. However, the majority of studies of exercise and cancer have been conducted with women with early stage breast cancer, limiting the generalizability of these studies to other cancer populations. The purpose of this

systematic review is to provide a synthesis of the extant research evidence about th e benefits of exercise related to cancer recovery.

Effect of regular Tai Chi and jogging exercise on neuromuscular reaction in older people.

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OBJECTIVES: to investigate the effects of regular Tai Chi (TC) or jogging exercise on neuromuscular reaction in older people. DESIGN: cross-sectional study. SETTING: university biomechanics laboratory. SUBJECTS: 21 long-term elderly TC practitioners were compared with 18 regular elderly joggers and 22 sedentary counterparts. MEASUREMENTS: electromyography (EMG) was used to detect the neuromuscular reaction of the leg muscles to an unexpected ankle inversion perturbation. The latency of the muscles, which was defined as the time that the moment of perturbation began to the onset of the EMG response, was evaluated. RESULTS: a one-way ANOVA revealed that there were significant differences in the latency of the rectus femoris (R) and anterior tibialis (T) muscles between the three groups, but that there were no differences in the latency of the semitendinosus (S) and gastrocnemius (G) muscles. Further tests indicated that the R and T muscles in the TC and jogging groups were activated significantly faster than those in the control group. No significant difference was found for the muscle onset latencies between the TC and jogging groups. CONCLUSION: maintaining information processing speed during ageing is important, because of the role that it plays in many everyday events. The R and T muscles in the regular TC and jogging groups showed faster responses to unexpected ankle inversion perturbations, which is helpful for the timely correction of postural disturbances, than those in the sedentary control group.
J Gerontol Nurs. 2005 May;31(5):11-9; quiz 59-60. Related Articles, Links

Osteoarthritis in older adults: current treatments.

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Although there is no cure for osteoarthritis, numerous treatments are available for symptom relief. Pharmacological treatments primarily focus on pain relief; however, in older adults there is continuing concern related to the risk of side effects and interactions with other medications. In contrast, non-pharmacological treatments, such as exercise, joint protection, and stress reduction, provide symptom relief with few side effects. In addition, alternative treatments such as nutritional supplements, herbal preparations, acupuncture, and tai chi are being investigated for their efficacy. Nurses should encourage patients to use a combination of treatments that provide optimum symptom relief with the fewest side effects.

J Gerontol A Biol Sci Med Sci. 2005 Feb;60(2):187-94. Related Articles, Links

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Tai Chi and fall reductions in older adults: a randomized controlled trial.

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BACKGROUND: The authors' objective was to evaluate the efficacy of a 6-month Tai Chi intervention for decreasing the number of falls and the risk for falling in older persons. METHODS: This randomized controlled trial involved a sample of 256 physically inactive, community-dwelling adults aged 70 to 92 (mean age, 77.48 years; standard deviation, 4.95 years) who were recruited through a patient database in Portland, Oregon. Participants were randomized to participate in a three-times-per-week Tai Chi group or to a stretching control group for 6 months. The primary outcome measure was the number of falls; the secondary outcome measures included functional balance (Berg Balance Scale, Dynamic Gait Index, Functional Reach, and single-leg standing), physical performance (50-foot speed walk, Up&Go), and fear of falling, assessed at baseline, 3 months, 6 months (intervention termination), and at a 6-month postintervention follow-up. RESULTS: At the end of the 6-month intervention, significantly fewer falls (n=38 vs 73; p=.007), lower proportions of fallers (28% vs 46%; p=.01), and fewer injurious falls (7% vs 18%; p=.03) were observed in the Tai Chi group compared with the stretching control group. After adjusting for baseline covariates, the risk for multiple falls in the Tai Chi group was 55% lower than that of the stretching control group (risk ratio,.45; 95% confidence interval, 0.30 to 0.70). Compared with the stretching control participants, the Tai Chi participants showed significant improvements (p<.001) in all measures of functional balance, physical performance, and reduced fear of falling. Intervention gains in these measures were maintained at a 6-month postintervention follow-up in the Tai Chi group. CONCLUSIONS: A three-times-per-week, 6-month Tai Chi program is effective in decreasing the number of falls, the risk for falling, and the fear of falling, and it improves functional balance and physical performance in physically inactive persons aged 70 years or older.

J Bone Miner Metab. 2005;23(2):186-90. Related Articles, Links

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Beneficial effects of regular Tai Chi exercise on musculoskeletal system.

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This study was performed to evaluate the potential benefits of regular Tai Chi Chun (TCC) exercise on bone mineral density (BMD) and neuromuscular function in postmenopausal women. In this cross-sectional study, 99 healthy postmenopausal women, with a mean age of 55.9+/-3.1 years and within 10 years after the menopause, were recruited; including 48 subjects who had been regularly practicing TCC exercise for more than 3 h/week and 51 age- and sex-matched sedentary controls (CON). BMD was measured in the lumbar spine and proximal femur of the non-dominant leg (femoral neck, greater trochanter, and Ward's triangle), using dual-energy X-ray absorptiometry (DXA). Neuromuscular function was evaluated, including magnitude of trunk bend-and-reach, quadriceps muscle strength, and single-stance time on the nondominant leg. The TCC group showed overall higher BMD at all measurement sites, with a significant difference found at the spine (7.1%), greater trochanter (7.2%), and Ward's triangle (7.1%) of the proximal femur (all; P<0.05). Functional tests revealed an average 43.3% significantly greater quadriceps strength (P<0.01), and 67.8% significantly longer single-stance time in the TCC group as compared

with the CON group ($P<0.05$), as well as a greater magnitude of trunk bend-and-reach in the TCC group ($P=0.08$). Bivariate linear correlation analysis showed that quadriceps muscle strength was significantly correlated with the single-stance time ($r=0.41$; $P<0.01$). This study revealed that regular TCC exercise may have an association with higher BMD and better neuromuscular function in early postmenopausal women.