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Exercise and Fitness REPORT

When reading reports on new research, it is important to remember that no single study should be seen as providing the whole truth. The following reports offer helpful clues but in most cases further research is needed before firm conclusions can be drawn.

Tai Chi May Help Heart Health

Investigators performing a systematic review of the literature evaluating tai chi exercise as an intervention for patients with cardiovascular disease (CVD) or with CVD risk factors (CVDRF) found that 29 studies met inclusion criteria: 9 randomized controlled trials (RCTs), 14 nonrandomized studies, and 6 observational trials. Three studies examined subjects with coronary heart disease, 5 in subjects with heart failure, and 10 in heterogeneous populations that included those with CVD. Eleven studies examined subjects with CVDRF (hypertension, dyslipidemia, impaired glucose metabolism). Study duration ranged from 8 weeks to 3 years. Most studies included fewer than 100 subjects (range, 5-207). Six of 9 RCTs were of adequate quality (Jadad >/= 3). Most studies reported improvements with tai chi, including blood pressure reductions and increases in exercise capacity. No adverse effects were reported.

> Yeh GY, Wang C, Wayne PM, Phillips R. Tai Chi Exercise for Patients With Cardiovascular Conditions and Risk Factors: A Systematic Review. *J Cardiopulm Rehabil Prev.* May/June 2009;29(3):152-160.

Whole Body Vibration and Walking Appear to Provide Complementary Effects

For eight months, groups of older women performed either low-frequency vibration exercise or a walking-based program in health-related fitness. Exercise was performed three times per week. A health-related battery of tests was applied. Knee function was recorded by an isokinetic dynamometer. Physical fitness was measured using the following tests: vertical jump test, chair rise test and maximal walking speed test. After 8 months, the walking group improved the time spent to walk 4 meters (20%) and to perform the chair rise test (12%) compared to the WBV group. In contrast, the comparison of the changes in vertical jump showed the higher effectiveness of the vibratory exercise in 7%. These results indicate that both programs differed in the main achievements and could be complementary to prevent lower limb muscle strength decrease with aging.

> Raimundo AM, Gusi N, Tomas-Carus P. Fitness efficacy of vibratory exercise compared to walking in postmenopausal women. *Eur J Appl Physiol.* May 12 2009.

Aerobic Exercise Improves Cognitive Function

To study the effects of aerobic exercise on the cognitive brain functions of older adults, researchers had 12 older and 12 younger adult males perform a modified flanker task (a visual experiment in which the participant is asked to respond to a centered and directed item surrounded or flanked by distracting symbols like arrows or letters) during a baseline session (with no exercise) and then after light and moderate cycling exercise on different days while measures of task performance and the P3 component of an event-related brain potential were collected. For both age groups, reaction time following moderate exercise was shorter relative to the other sessions, and P3 latencies following both light and moderate exercise were shorter compared with the baseline session. In contrast, P3 amplitude increased only following moderate exercise in younger adults. These findings suggest that light and moderate exercises improve cognitive function across the adult lifespan, although the mechanisms underlying the effects of observed acute aerobic exercise on cognitive function may be age dependent.

> Kamijo K, Hayashi Y, Sakai T, Yahiro T, Tanaka K, Nishihira Y. Acute effects of aerobic exercise on cognitive function in older adults. *J Gerontol B Psychol Sci Soc Sci.* May 2009;64(3):356-363.

