

The Efficacy of Exercise as a Long-term Antidepressant in Elderly Subjects: A Randomized, Controlled Trial

Nalin A. Singh, Karen M. Clements, and Maria A. Fiatarone Singh; Division on Aging, Harvard Medical School, Boston, Massachusetts; Brockton West Roxbury VA Medical Center, Brockton, Massachusetts; Jean Mayer U.S. Dept. of Agriculture Human Nutrition Research Center on Aging at Tufts University, Boston, Massachusetts; The Hebrew Rehabilitation Center for Aged, Roslindale, Massachusetts; The School of Exercise and Sport Science, University of Sydney, Australia.

BACKGROUND:

Unsupervised exercise has been shown to benefit younger depressed patients, however, there is no evidence that unsupervised exercise can be used as a maintenance treatment for depression in elderly patients. The purpose of this study was to test the feasibility and efficacy of unsupervised exercise as a long-term treatment for clinical depression in elderly patients.

OBJECTIVES:

The authors studied 32 subjects (71.3 +/- 2.3 years of age) in a 20-week, randomized, controlled trial, with follow-up at 26 months. Subjects were community-dwelling patients with major or minor depression or dysthymia (milder but long lasting depression). Exercisers engaged in 10 weeks of supervised strength training exercise followed by 10 weeks of unsupervised exercise. The non-exercising controls attended health education lectures. During weeks 10-20 the exercise group had three choices for continuing training; (1) at the same facility where they completed the 10-week program, (2) with a home-based program, or (3) at a community health facility. The exercise prescribed for all training options was three sets of eight repetitions at 80% of estimated 1-RM for 2-3 days per week. There were no health education sessions for control subjects during weeks 10-20.

All subjects were contacted weekly by phone to monitor health status. After week 20 there were no further recommendations for exercise or other treatment made to any subjects, and no further interactions with the research staff or facility. Blinded assessment (no knowledge of which individual/group is being assessed) was made with the Beck Depression Inventory (BDI), the Philadelphia Geriatric Morale Scale, and Ewerts's Self Efficacy Scale at 20 weeks and with the BDI and physical activity questionnaire at 26 months.

RESULTS:

The exercise group completed 18 +/- 2 sessions of unsupervised exercise during weeks 10-20. The relative improvements in depression scores in the exercisers were 1.5 to 2.5 times greater than those in the controls at the end of 20 weeks. One third of the group initially randomized to exercise was still strength training regularly (twice a week or more) at the 26-month follow-up. The BDI was significantly reduced at both 20 weeks and 26 months of follow-up in exercisers compared with controls ($p < .05$ - $.001$).

SUMMARY:

Despite the removal of supervision, transport costs, and group setting at 10 weeks, exercise was associated with a significant reduction in depression at both 20 weeks and after 26 months. The antidepressant effect of exercise was maintained and self-efficacy and morale continued to improve over weeks 10-20 even when laboratory-based exercise was replaced with unsupervised patient-directed exercise. More than 2 years after the initial exercise study, patients in the exercise group were still significantly different from the controls in depressive symptom response. Unsupervised exercise appears to be an effective long-term treatment for clinical depression in older adults.

KEISER PIECES USED:

Chest press, lat pull down, leg press, leg extension