

Physical Exercise and the Prevention of Disability in Activities of Daily Living in Older Persons With Osteoarthritis

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Background The prevention of disability in activities of daily living (ADL) may prolong older persons' autonomy (older persons are defined in this study as those aged ≥ 60 years). However, proved preventive strategies for ADL disability are lacking. A sedentary lifestyle is an important cause of disability. This study examines whether an exercise program can prevent ADL disability.

Methods A 2-center, randomized, single-blind, controlled trial was conducted in which participants were assigned to an aerobic exercise program, a resistance exercise program, or an attention control group. Of the 439 community-dwelling persons aged 60 years or older with knee osteoarthritis originally recruited, the 250 participants initially free of ADL disability were used for this study. Incident ADL disability, defined as developing difficulty in transferring from a bed to a chair, eating, dressing, using the toilet, or bathing, was assessed quarterly during 18 months of follow-up.

Results The cumulative incidence of ADL disability was lower in the exercise groups (37.1%) than in the attention control group (52.5%) ($P = .02$). After adjustment for demographics and baseline physical function, the relative risk of incident ADL disability for assignment to exercise was 0.57 (95% confidence interval, 0.38-0.85; $P = .006$). Both exercise programs prevented ADL disability; the relative risks were 0.60 (95% confidence interval, 0.38-0.97; $P = .04$) for resistance exercise and 0.53 (95% confidence interval, 0.33-0.85; $P = .009$) for aerobic exercise. The lowest ADL disability risks were found for participants with the highest compliance to exercise.

Conclusions Aerobic and resistance exercise may reduce the incidence of ADL disability in older persons with knee osteoarthritis. Exercise may be an effective strategy for preventing ADL disability and, consequently, may prolong older persons' autonomy.

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