Physical Activity, Including Walking, and Cognitive Function in Older Women

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**Context** Physical activity may help maintain cognitive function in older adults.

**Objective** To examine the relation of long-term regular physical activity, including walking, to cognitive function.

**Design** Women reported participation in leisure-time physical activities on biennial mailed questionnaires beginning in 1986. We assessed long-term activity by averaging energy expenditures from questionnaires in 1986 through participants' baseline cognitive assessments (1995 to 2001). We used linear regression to estimate adjusted mean differences in baseline cognitive performance and cognitive decline over 2 years, across levels of physical activity and walking.

**Setting and Participants** Nurses' Health Study, including 18,766 US women aged 70 to 81 years.

**Main Outcome Measure** Validated telephone assessments of cognition administered twice approximately 2 years apart (1995 to 2001 and 1997 to 2003), including tests of general cognition, verbal memory, category fluency, and attention.

**Results** Higher levels of activity were associated with better cognitive performance. On a global score combining results of all 6 tests, women in the second through fifth quintiles of energy expenditure scored an average of 0.06, 0.06, 0.09, and 0.10 standard units higher than women in the lowest quintile (P for trend < .001). Compared with women in the lowest physical activity quintile, we found a 20% lower risk of cognitive impairment for women in the highest quintile of activity. Among women performing the equivalent of walking at an easy pace for at least 1.5 h/wk, mean global scores were 0.06 to 0.07 units higher compared with walking less than 40 min/wk (P<.003). We also observed less cognitive decline among women who were more active, especially those in the 2 highest quintiles of energy expenditure. Women in the fourth and fifth quintiles had mean changes in global scores that were 0.04 (95% confidence interval, 0.02-0.10) and 0.06 (95% confidence interval, 0.02-0.11) standard units better than those in the lowest quintile.

**Conclusion** Long-term regular physical activity, including walking, is associated with significantly better cognitive function and less cognitive decline in older women.