

Impact of physical activity and cognition on Activities of Daily Living in home-dwelling patients with mild to moderate Alzheimer's disease

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Background: Background: In Alzheimer's disease (AD), the decline in activities of daily living (ADL) is increasingly recognized as a source of considerable social, health, and economic costs. The ability to perform ADL is influenced by dementia severity and by specific neuropsychiatric symptoms, but it is unclear to which extent cognition and physical activity relates to ADL. Two independent metaanalyses have concluded that being physically active at a medium/high level reduces not only the risk of progression of basic ADL disability but also the risk of cognitive decline in community dwelling adults. Furthermore, an observational study shows that greater cardiorespiratory fitness is associated with slowed progression of dementia and brain atrophy in patients with AD. **Objective:** To assess the influence of physical activity and cognition on ADL. **Methods:** In the present study, data from the "Preserving quality of life, physical health and functional ability in Alzheimer's disease: The effect of physical exercise (ADEX) study" a randomized controlled multicentre study, was used. Baseline data from 166 patients with AD (age (mean \pm SD): 70,9 \pm 7,5; gender (f/m): 72/94; Mini-Mental State Examination (MMSE)(mean \pm SD): 24,1 \pm 3,6) were included. ADL was assessed by the Alzheimer's Disease Co-operative Study - Activities of Daily Living (ADCS- ADL) scale and physical activity by the Physical Activity Scale for the Elderly (PASE) (caregiver interview). Furthermore, global cognitive function and mental speed/attention was assessed by the MMSE and Symbol Digit Modalities Test (SDMT), respectively. Two linear regression models were performed to investigate the impact of SDMT and PASE on ADCS-ADL. Covariates were PASE, age, gender and MMSE. In the second model, PASE was replaced by SDMT. **Results:** A significant association between ADL and PASE was found and between ADL and SDMT (B: 0,06; (SE: \pm 0,02); β :0,27; and B: 0,06 (SE: \pm 0,06); β :0,09, respectively). **Conclusions:** Both mental speed/attention (SDMT) and physical activity (PASE) had a significant but modest association with ADL. There was a tendency that low physical activity was associated with impaired ADL to a greater extent than mental speed/attention. Future studies should clarify if improving physical activity may supplement pharmacotherapy in postponing the decline in ADL in patients with AD.