

5 years of follow-up (n=2957, 58% women, 74.9±4.8 yrs). Those with HGDS or dementia at baseline were excluded from the analysis. The reported activity was categorized into 2 groups as no-activity versus any-activity. Depressive symptoms were assessed by the 15-item Geriatric Depression Scale (GDS) on average 5 years later. RESULTS: After adjusting for demographic and health-related risk factors, those who reported having any LA had significantly fewer HGDS after the follow-up of 5 years (6 or higher GDS scores, Odds Ratio (OR) = 0.46, 95% Confidence Interval (CI): 0.27 ~ 0.76, P = 0.003). However, reporting any PA at baseline was not significantly associated with HGDS (OR = 0.71, 95% CI: 0.51 ~ 1.00, P = 0.053). CONCLUSION: Our study shows that any LA among older adults is associated with having less depressive symptoms 5 years later among community-dwelling older adults while having any PA was not associated with depressive symptoms after 5 years of follow-up.

#### THE EFFECT OF LOW-INTENSITY DAILY WALKING ACTIVITY ON COGNITIVE AND BRAIN FUNCTION IN OLDER ADULTS

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Physical activity is an effective intervention to prevent or delay cognitive decline and dementia in older adults; however, many have difficulty achieving recommended moderate- to vigorous-intensity guidelines. This study examined the impact of low-intensity daily walking activity on executive cognitive and brain function in 66 older adults (mean age=67.26 ; SD=6.04). Daily walking activity was measured using a step activity monitor and brain function was assessed using functional magnetic resonance imaging during the Flanker task. Analyses included whole and region of interest (ROI) in the right middle frontal gyrus (RMFG), occipital cortex (OCC) and anterior cingulate (ACC). Partial correlations were performed between step activity, behavioral performance, and ROI activation, adjusting for age and education. Most of the step activity was in the low-intensity range. No associations were observed between step activity and task performance (p>.05). Task-related activation occurred in the RMFG, lateral OCC and paracingulate (p<.01). Increased activation in the RMFG was associated with greater amount  $r(62)=.390$ ,  $p=.001$ , duration  $r(62)=.309$ ,  $p=.013$  and frequency  $r(62)=.327$ ,  $p=.007$  of step activity. Stratification by sex revealed a positive association between amount of step activity and RMFG activation in women  $r(44)=.360$ ,  $p=.014$ , but not men. Whole brain correlation revealed that amount of step activity was positively associated with precuneus activation (p<.01), an area impacted early in Alzheimer's disease. These results support the benefits of low intensity daily walking activity on prefrontal function in older adults and suggest the importance of designing attainable and sustainable physical activity interventions to promote brain health in older adults.

#### THE EFFECTS OF EXERCISE ON COGNITIVE FUNCTION IN OLDER ADULTS WITH DIFFERENT TYPES OF DEMENTIA: A META-ANALYSIS

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Combating dementia is a public health priority, and exercise training is one promising strategy for dementia prevention. However, its efficacy in promoting cognitive outcomes in different types of dementia remains unknown. We conducted a systematic review (N = 27) and meta-analysis (N = 24) of randomized controlled trials with cognitive function as a primary or secondary outcome. We aimed to assess the effect of exercise interventions on the cognitive function of older adults (>60 years) diagnosed with different types of dementia. We synthesized data from 2,441 older adults with dementia. Eleven trials included older adults with multiple types of dementia, eight with Alzheimer's disease, six with unspecified types of dementia, and two with vascular cognitive impairment. We performed random-effects models using robust variance estimation (RVE) and tested potential moderators using the approximate Hotelling-Zhang test (HTZ). Results suggest a small effect of exercise on cognitive function for all-cause dementia (g = 0.18; 95% CI: 0.04, 0.33; p = 0.016); however, the effects did not differ by type of dementia. Moderation analyses showed that trials that did not specify participants' severity of dementia, applied individual-level randomization, and had higher intervention adherence demonstrated larger exercise effects on cognitive function for all-cause dementia. We conclude that exercise promotes small improvements in the cognitive function of older adults with all-cause dementia. More research including different types of dementia is needed if we hope to determine the precise effects of exercise for each type of dementia.

#### THE INVENTORY OF PHYSICAL ACTIVITY BARRIERS FOR ADULTS 50 YEARS AND OLDER: REFINEMENT AND VALIDATION

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Addressing physical activity (PA) barriers is an essential component of increasing PA among the 56-73% of community-dwelling adults 50 years and older who are not performing the recommended 150 minutes of moderate-to-vigorous PA. As there is no feasible, multi-factorial tool to assess PA barriers among this population, we developed and validated a PA barrier assessment tool called the Inventory of Physical Activity Barriers (IPAB). We collected cross-sectional data on 503 adults (mean age 70.1), with 79 participants completing the scale twice for test-retest reliability and 64 completing a cross-over design examining the ability to use two administration formats interchangeably. Our analyses