

# Cognitive and physical activity and dementia

## A 44-year longitudinal population study of women

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### Study objective and summary result

This study investigated whether midlife cognitive and physical activity levels are associated with the risk of dementia in women, and it found that greater midlife cognitive and physical activity levels are associated with reduced risks of dementia in women.

### What is known and what this paper adds

Previous studies investigating associations between cognitive and physical activity levels and the risk of dementia have reported inconsistent results and have frequently had limitations such as short follow-up times or suboptimal dementia ascertainment procedures. This study used a rigorous methodology to confirm that the associations exist in women.

### Participants and setting

This study analyzed data from 800 women (mean baseline age,  $47.2 \pm 4.5$  years) who participated in the Prospective Population Study of Women, as part of the Gothenburg H70 Birth Cohort Study, in Gothenburg, Sweden. The baseline assessments occurred in 1968–1969, and follow-up assessments occurred in 1974–1975, 1980–1981, 1992–1993, 2000–2001, 2005–2006, and 2009–2010.

### Design, size, and duration

At baseline, the women underwent interviews to assess their cognitive and physical activity levels. Cognitive activity levels were scored based on engagement in intellectual, artistic, manual, club, and religious activities. Physical activity levels were evaluated with the Saltin-Grimby Physical Activity Level Scale. Dementia diagnoses were based on neuropsychiatric examinations and informant interviews conducted at follow-up assessments. This study also examined data from the Swedish Hospital Discharge Registry to detect dementia diagnoses for women lost to follow-up. Cox regression models were used to determine whether baseline cognitive and physical activity levels were associated with the risk of incident dementia.

**Table** Associations between baseline physical and cognitive activity levels and dementia subtypes

Dementia subtype	HR (95% CI) in relation to baseline cognitive activity	HR (95% CI) in relation to baseline physical activity
Total dementia	0.66 (0.49–0.89)	0.72 (0.50–1.04)
Alzheimer disease	0.54 (0.36–0.82)	0.96 (0.54–1.69)
Vascular dementia	0.98 (0.44–2.17)	0.72 (0.27–1.93)
Mixed dementia	0.99 (0.52–1.87)	0.43 (0.22–0.86)
Dementia with cerebrovascular disease	0.95 (0.60–1.50)	0.47 (0.28–0.78)

Abbreviations: CI = confidence interval; HR = hazard ratio.

### Main results and the role of chance

Between 1968 and 2012, 194 women (24.3%) developed dementia. Greater baseline cognitive activity levels were associated with a reduced risk of incident dementia. Greater baseline physical activity levels were associated with reduced risks of certain dementia subtypes.

### Bias, confounding, and other reasons for caution

The study cohort was subject to cumulative attrition and death as a competing outcome. Cognitive and physical activity levels were only assessed at baseline.

### Generalizability to other populations

The cohort's exclusive inclusion of female Caucasian residents of Sweden may limit the generalizability of this study's results.

### Study funding/potential competing interests

This study was funded by various foundations and the Swedish government. The authors report no competing interests. Go to [Neurology.org/N](http://Neurology.org/N) for full disclosures.

*A draft of the short-form article was written by M. Dalefield, a writer with Editage, a division of Cactus Communications. The authors of the full-length article and the journal editors edited and approved the final version.*

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