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Bloomberg *et al* used data from the English Longitudinal Study of Aging (ELSA) to investigate the association between physical activity, sleep, cognitive performance, and cognitive decline.<sup>1</sup>



## Objective

To examine the associations and combinations of physical activity and sleep duration with 10-year cognitive trajectories



## Data collection

Sleep and physical activity data were collected at baseline through self-report. Cognitive function was assessed at baseline and follow-up.



**Population**  
English adults  
aged ≥50  
8958 participants



**Baseline data**  
Sleep duration  
Physical activity  
Cognitive function



**Follow-up data**  
Sleep duration  
Physical activity  
Cognitive function



## Data analysis

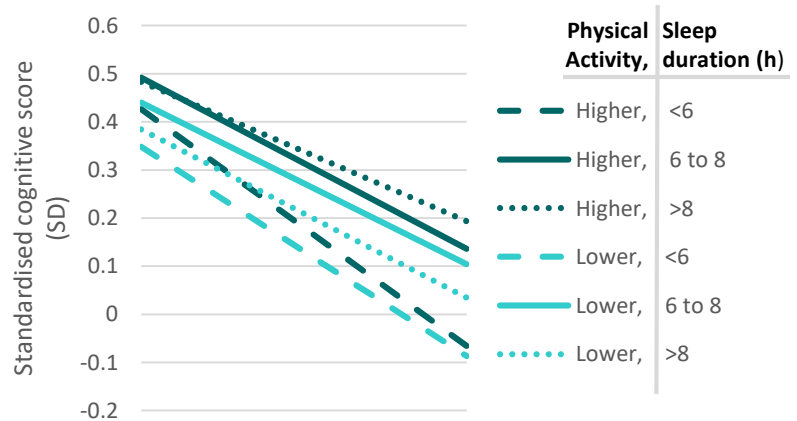


Longitudinal study

## KEY RESULTS

- Lower physical activity and sleep outside the 'optimum' range at baseline were independently associated with lower cognitive performance.
- However, in the high physical activity group sleep duration did not affect baseline cognitive performance.
- Low sleep was associated with faster cognitive decline detected at follow-up.
- In males, participants with higher physical activity and long sleep declined less rapidly than those with higher physical activity and optimal sleep.

Figure 1A. 10-year cognitive trajectory from age 50 years



- The longitudinal nature of this study allowed the authors to examine cognitive decline over time, as well as at baseline.
- The main limitation of this study is that it is not possible to know the direction of causality of the associations found. For example, the association between low sleep duration and the rate of cognitive decline may be attributed to the fact that sleep behaviours might have an impact of brain health, or to the fact that reduced brain health might result to disrupted sleep.

