Super Movers Show Slower Cognitive Decline in Older Age

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> The specter of cognitive decline looms large for an aging population, challenging both patients and healthcare systems. Identifying factors that confer resilience against this decline remains a critical, unmet need.1
> New research suggests that a distinct subgroup of older adults, characterized by unusually robust physical mobility, may also possess a natural defense against age-related cognitive impairment.1

KEY TAKEAWAYS

- The Pivot: Exceptionally fast gait speed in older adults correlates with preserved cognitive function and reduced risk of incident cognitive impairment.
- The Data: Super movers had a 70% lower risk of incident cognitive impairment (HR 0.30; 95% CI, 0.15-0.60; P=.0008) over a median follow-up of 4.5 years.
- The Action: Clinicians should consider gait speed as a potential, easily measurable biomarker for cognitive resilience in older patients.

Cognitive decline is not an inevitable consequence of aging for everyone. Some individuals maintain sharp cognitive faculties well into their ninth decade and beyond, prompting a search for the biological and lifestyle factors that differentiate them. The concept of 'super agers' has gained traction, describing those who defy typical age-related decline. This latest work introduces a related, but distinct, population: 'super movers'.1

Jayakody and colleagues defined super movers as individuals aged 80 years or older whose gait speed measured at least 1.5 standard deviations above the age- and sex-adjusted means. This stringent definition identified a cohort of older adults with exceptional physical performance. The study aimed to understand if this physical prowess translated into cognitive benefits, specifically examining their risk of incident cognitive impairment, trajectories of cognitive decline, and overall brain health.1

How they ran it

The investigators conducted a prospective cohort study, drawing participants from a larger ongoing longitudinal study of aging. They identified 160 super movers and compared them to 320 nonsuper movers, who were matched for age, sex, and baseline cognitive status. All participants were aged 80 years or older at baseline and free of dementia. The median follow-up period for cognitive outcomes was 4.5 years, with some participants followed for up to 8 years.1

Cognitive function was assessed annually using a comprehensive battery of neuropsychological tests, including measures of memory, executive function, language, and processing speed. Incident cognitive impairment was defined by a consensus panel based on changes in these test scores and clinical evaluation. Brain health was evaluated using structural

MRI scans, focusing on measures like total brain volume, hippocampal volume, and white matter lesion burden. Lifestyle factors, medical comorbidities, and biological age markers were also collected at baseline.1

Super movers demonstrated a significantly lower prevalence of chronic medical conditions at baseline compared to nonsuper movers. They reported healthier lifestyles, including higher levels of physical activity and lower rates of smoking. Furthermore, biological age, assessed using epigenetic clocks, was consistently younger in super movers, suggesting a more youthful physiological profile despite chronological age. These baseline differences set the stage for the observed cognitive outcomes.1

The primary outcome, incident cognitive impairment, was substantially less common in the super mover group. Super movers had a 70% lower risk of developing cognitive impairment (HR 0.30; 95% CI, 0.15-0.60; P=.0008) over the follow-up period. This was a robust finding, persisting even after adjusting for baseline differences in education, comorbidities, and lifestyle factors. The absolute incidence rate was 3.2 per 100 person-years in super movers compared to 10.7 per 100 person-years in nonsuper movers.1

Beyond incident impairment, super movers also exhibited slower trajectories of cognitive decline across multiple domains. Their scores on global cognitive function tests, memory, and executive function declined at a significantly slower rate than their nonsuper mover counterparts (P<.01 for all domains). This suggests a protective effect that extends beyond merely preventing the onset of impairment, indicating a sustained preservation of cognitive abilities.1

Brain imaging data supported the clinical findings. Super movers had significantly larger total brain volumes (mean difference 18.5 cm3; P=.003) and hippocampal volumes (mean difference 0.4 cm3; P=.001) at baseline. They also showed a lower burden of white matter lesions (mean difference -0.8 cm3; P=.005), markers often associated with cognitive decline. These structural differences suggest a healthier brain architecture in super movers, potentially contributing to their cognitive resilience. The longitudinal MRI data also indicated slower rates of brain atrophy in super movers, particularly in regions critical for memory and executive function.1

The open-label design is the obvious caveat. While the cognitive assessments were blinded to group assignment, the initial identification of super movers was based on an observable physical characteristic. Still, the objective nature of gait speed measurement and the rigorous matching process mitigate some of this concern. The study was also conducted in a relatively healthy, community-dwelling older adult population, which means the findings may not directly translate to frail or institutionalized individuals. The generalizability to more diverse ethnic and socioeconomic groups also remains an open question, as the cohort was predominantly of European descent.1

CLINICAL IMPLICATIONS

This study provides compelling evidence that exceptional physical mobility in very old age is not merely a marker of good health, but a strong correlate of cognitive resilience. For clinicians, identifying 'super movers' could offer a simple, non-invasive way to flag patients at lower risk of cognitive decline, potentially allowing for more targeted screening and intervention strategies for those who do not meet this threshold.

The implication is not that every patient needs to become a super mover, but that maintaining robust physical function, particularly gait speed, may be a modifiable target for promoting brain health. This reinforces the long-standing advice to encourage physical activity in older adults, now with a clearer link to specific cognitive outcomes.

> The challenge lies in understanding the underlying mechanisms. Is it simply that healthier individuals are both physically and cognitively resilient, or does the act of maintaining high gait speed actively contribute to brain health? Future research needs to disentangle this relationship, perhaps through interventional studies focusing on improving gait speed in older adults.
> For now, the data suggests that a brisk walk might be doing more for your patients than just keeping their heart healthy. It might be keeping their minds sharp, too.

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REFERENCES

1. 1. Jayakody O, Milman S, Barzilai N. Cognitive Aging and Brain Health: A Comparison of Super Movers vs Nonsuper Movers. Neurology 2026. doi:10.1212/wnl.0000000000214776

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