

Background

Slow **gait speed** is a key marker of functional capacity in older adults and is strongly associated with disability, fall risk, and mortality.

As walking **automaticity declines**, maintenance of gait relies on **higher-order cognitive processes**.

Although prior work demonstrates associations between **sustained attention** and **gait speed**, it is unclear whether this reflects a specific compensatory mechanism or an effect of broader cognitive decline.

We examined whether sustained attention was associated with gait speed independent of **mild cognitive impairment (MCI)**.

Methods



Participants

N = 90
79.4 years (SD = 7.0)



Mild Executive Dysfunction

Trail Making Test Part B

Time < 75th Percentile

Based on age- and education-corrected norms



Mild Physical Impairment

Short Physical Performance Battery ≤ 10

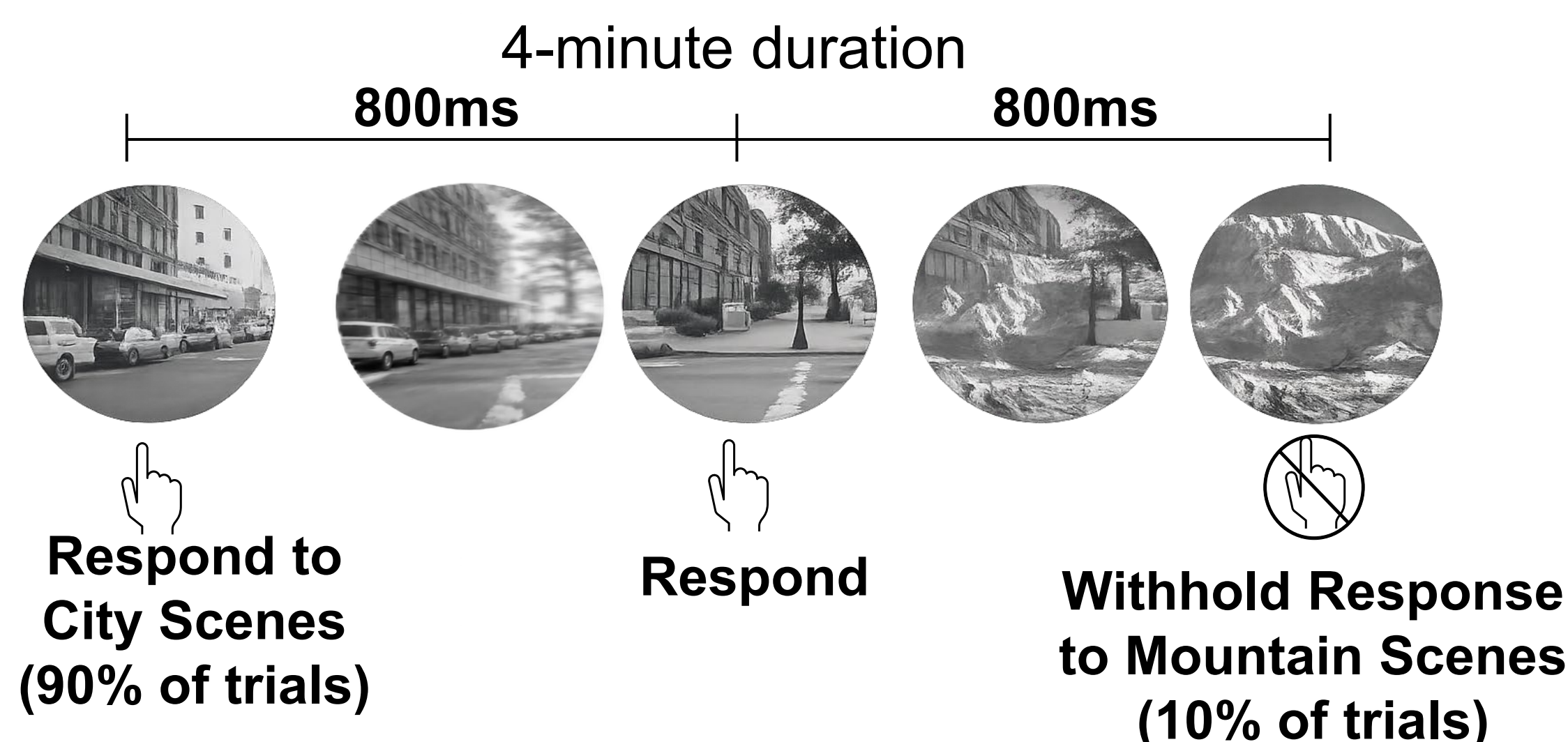


Exclusion of Dementia

Global Clinical Dementia Rating (CDR) ≥ 1

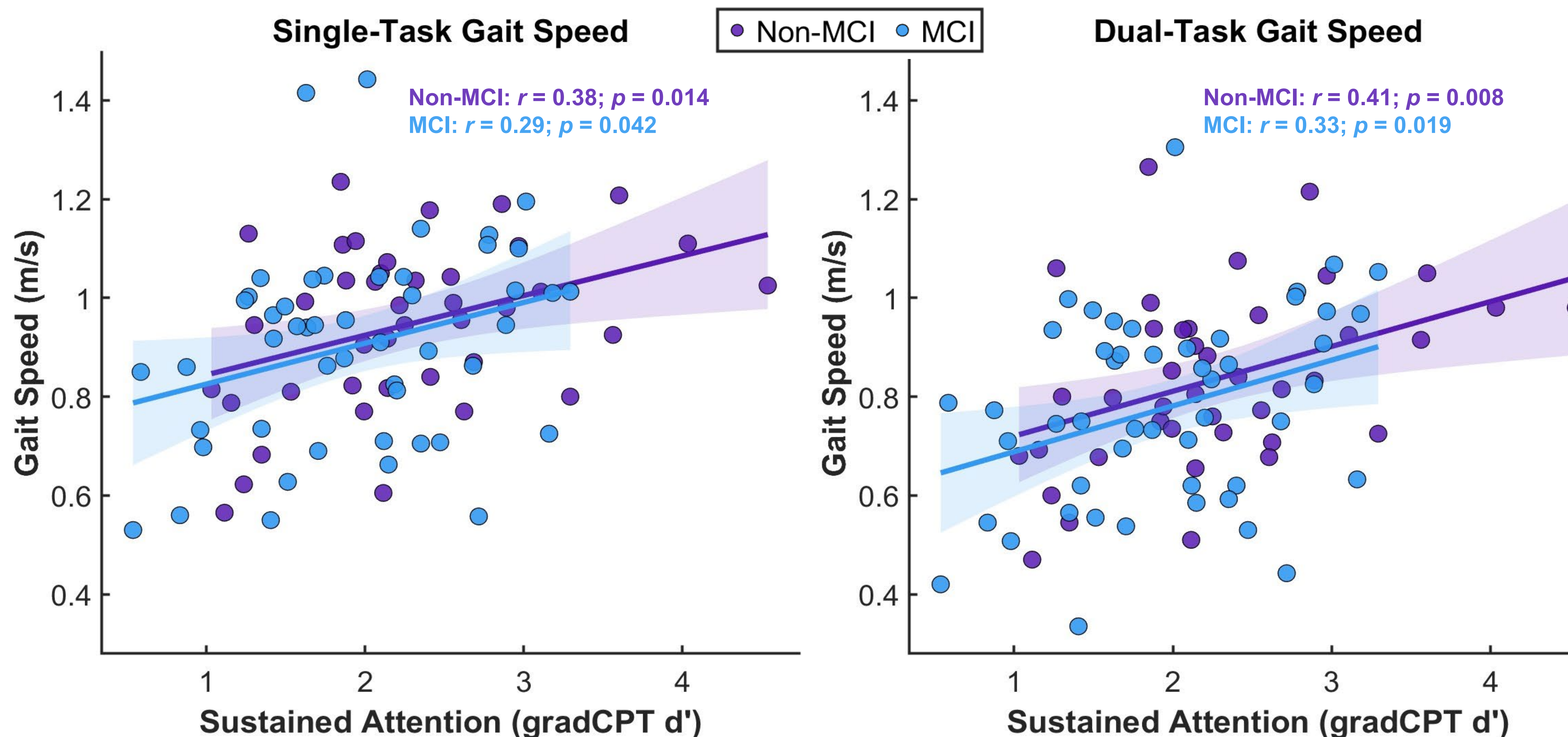
Gait Speed: Single- and dual-task gait speed was assessed using Mobility Lab wearable sensors.

Sustained Attention: Gradual Onset Continuous Performance Task (gradCPT)



Results

49/90 individuals met criteria for MCI (MoCA ≤ 25).



Sustained attention predicted **gait speed** in both conditions **regardless of MCI status**.

A series of linear regression models including **age**, **sustained attention**, and **MCI** status was associated with gait speed under single- and dual-task conditions.

	Adjusted R ²	Predictors	β	p-value
Single-Task Gait Speed	0.09*	Age	-0.10	0.36
		gradCPT Accuracy	0.30	0.04*
		MCI	-0.02	0.83
		gradCPT x MCI	-0.001	0.99
Dual-Task Gait Speed	0.12**	Age	-0.07	0.54
		gradCPT Accuracy	0.35	0.02*
		MCI	-0.07	0.53
		gradCPT x MCI	0.0003	0.99

Note. * $p < .05$; ** $p < .01$

There was **no evidence** that the association between **sustained attention** and **gait** differed by **MCI status** under either condition.

Conclusion and Clinical Implications

Sustained attention was related to gait speed under single- and dual-task conditions, **independent of MCI status**.

These findings suggest that **attentional control** may represent a **specific mechanism** for supporting gait in older adults with functional limitations.

Assessing **sustained attention** may **help identify** older adults at risk for **mobility decline** and **falls**.

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