

Fine Motor Coordination as a Functional Marker in Mild Cognitive Impairment and Alzheimer's Disease: A Narrative Review

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KEY TAKEAWAY

Fine motor coordination may serve as an accessible functional biomarker for early detection, disease monitoring, and rehabilitation across the Alzheimer's disease continuum.

Conclusion: Fine motor coordination represents a clinically meaningful functional marker associated with cognitive decline across Alzheimer's disease. Incorporating fine motor assessment into clinical practice may improve early identification, disease monitoring, and rehabilitation while expanding access to functional evaluation in resource-limited settings.

Background	Methods	Main Findings	Clinical Implications	References
Alzheimer's disease (AD) is characterized by progressive cognitive decline, but motor dysfunction is increasingly recognized as part of the disease continuum. Fine motor coordination relies on complex motor-cognitive integration and deteriorates early in MCI and AD. Despite growing evidence, these impairments remain under recognized in clinical practice. Objective To summarize current evidence supporting fine motor coordination as a functional marker in mild cognitive impairment (MCI) and Alzheimer's disease.	• Study design: Narrative review • Database PubMed • Publication period 2015–2025 • Population Older adults with MCI or AD • Motor outcomes • Manual dexterity • Finger tapping • Hand motor performance • Analysis • Thematic synthesis of functional, cognitive and biological findings	Motor performance • ✓ Reduced manual dexterity • ✓ Slower finger tapping • ✓ Increased movement variability Cognitive & biological associations • ✓ Executive dysfunction • ✓ Attention deficits • ✓ Associated with AD biomarkers • ✓ Contributed to disease classification Functional relevance • ✓ Predictive of IADL decline • ✓ Motor-cognitive training improved performance • ✓ Potential functional biomarker	• Low-cost assessment • Easy to implement • Provides a functional biomarker • Supports early identification • Improves disease monitoring and follow-up • Guides rehabilitation planning • Applicable in low-resource settings	Schaefer SY, et al. <i>J Alzheimers Dis.</i> 2024. Potvin-Desrochers A, et al. <i>Alzheimers Dement (N Y).</i> 2022. Suzumura S, et al. <i>J Alzheimers Dis.</i> 2018. Schwenk M, et al. <i>J Alzheimers Dis.</i> 2022. Schaefer SY, et al. <i>J Alzheimers Dis.</i> 2023. CONTACT Iandra Vaz Cotrim iandravaz.13@gmail.com ORCID: 0009-0004-5818-0531 Poster Code: aaic2026.46b07d5 ALZHEIMER'S ASSOCIATION AAIC26