# Reliability and validity of walk tests for older adults with dementia - a systematic review

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**Background:** Walk tests are the most common, simple, and easy-to-administer tests to measure walking ability, monitor changes in gait performance and evaluate the effects of interventions in clinical settings. To apply walk tests withconfidence, clinicians need to understand their psychometrically properties (e.g., reliability and validity) for a particular population. This systematic review aimed to analyze the reliability and validity of clinically-oriented walk tests for older adults with dementia.

**Method:** A systematic literature search was conducted using PUBMED, MEDLINE, EMBASE and CINAHL by two independent reviewers (last search done in November 2020). The methodological quality of the studies was evaluated using the Consensus-based Standards for the selection of health Measurement Instruments (COSMIN) checklist.

**Result:** Seventeen articles published from 1997 to 2020 were included in this systematic review. For the distance-based walk tests, the Timed-Up-and-Go test (TUG), Groningen Meander Walk Test (GMWT), walk speed tests using 4-meter(4MeWT), 6-meter (6MeWT) and 10-meter corridor (10MeWT), and Figure of 8 test had good to excellent test-retest reliability [intraclass correlation coefficient (ICC) ≥ 0.76]. For the time-based walk tests, both the 2-minute walk test (2MWT)and 6-minute walk test (6MWT) had good to excellent test-retest reliability (ICC ≥ 0.76). The TUG, GMWT, 10MeWT, 2MWTand 6MWT also had moderate to strong correlations with other walk tests and functional outcomes.

**Conclusion:** The TUG, GMWT, 10MeWT, 2MWT and 6MWT have good to excellent reliability and validity in older adults with dementia. Future research using the recommended protocols for conducting psychometric studies is warranted to enhance the quality of research and to investigate other psychometric properties of walk tests in this population.