Measurement Characteristics and Clinical Utility of the 12-Item Multiple Sclerosis Walking Scale

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Mobility impairments are among the most common symptoms reported by individuals with multiple sclerosis (MS), with prevalence rates ranging from about 50% to >90%. Fewer than 50% of people with MS walk unaided. Gait abnormalities are found in individuals with early MS and those minimally affected by the disease; yet, people with MS can remain ambulatory for 10 to 20 years and more. Those with more disability (Expanded Disability Status Scale scores 3–5) are at moderate risk of developing gait limitations in 10 years, with half requiring an assistive device. Thus, measuring mobility is a common component of the examination of patients with MS. The 12-Item MS Walking Scale (MSWS-12) is a self-report measure of the impact of MS on walking ability. Two versions exist; this summary pertains to the original version. The MSWS-12 can be administered in less than 10 minutes; each item is rated on a 1–5 point scale (1 = no limitation and 5 = extreme limitation) and the score is transformed to a 0–100 point scale. Data support its reliability, validity, and responsiveness.

This abbreviated summary provides a review of the psychometric properties of the MSWS-12. A full review of the MSWS-12 and 62 other measures for patients with MS can be found at http://neuropt.org/go/healthcare-professionals/neurology-section-outcome-measures-recommendations/multiple-sclerosis. Reviews of nearly 200 other instruments for patients with various health conditions can be found at www.rehabilitationmeasures.org.

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BIBLIOGRAPHY


This instrument summary is designed to facilitate the selection of outcome measures by trained clinicians. The information contained in this summary represents a sample of the peer-reviewed research available at the time of this summary’s publication. The information contained in this summary does not constitute an endorsement of this instrument for clinical practice. The views expressed are those of the summary authors and do not represent those of authors’ employers, instrument owner(s), the Archives of Physical Medicine and Rehabilitation, the Rehabilitation Measures Database, or the United States Department of Education. The information contained in this summary has not been reviewed externally.

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**Measure Name:** The 12–Item Multiple Sclerosis Walking Scale

**Acronym:** MSWS-12

**Summary Authors:** Allen D, Potter K

**Population Reviewed:** Multiple Sclerosis

**Admin Time:** < 10 minutes

**Items:** 12

**Score:** 0/100 (min / max)**

**Purpose and Administration Instructions:** Self-report measure of the impact of MS on the individual’s walking ability

**Training Requirements:** None required

**Scoring Instructions:**
- Each item is rated on a 1 to 5 point scale (1 = no limitation and 5 = extreme limitation); the score is then transformed to a 0 to 100 point scale
- If the individual cannot walk, the requested box should be checked and no items should be completed

**Scoring Interpretation:**
- Higher score indicates greater impact of MS on walking ability

**Validity:**
- **Concurrent Validity:** Adequate to excellent correlations to gait measures in MS: T25FW, 6 MWT, oxygen cost of walking, accelerometer counts, daily step count, gait velocity measured by instrumented gait mat. Excellent correlations with MSIS-29
- **Predictive Validity:** At cut off of ≥ 75, sensitivity = 0.52 and specificity = 0.82 in predicting fallers vs. non-fallers

**Reliability:**
- **Test-retest Reliability:** Excellent in MS
- **Internal Consistency:** Excellent in MS

**Responsiveness:**
- In 54 patients with MS undergoing steroid treatment, an effect size of 0.93 was noted, compared to an effect size of 0.45 for EDSS and 0.36 for T25FW
- The MSWS-12 changed more (mean = 19.3) in people with MS who had a change ≥ 1 in EDSS scores compared to people who had no change in EDSS scores in a 6-24 month period
- In 43 patients receiving rehabilitation for MS, the MSWS-12 showed an effect size of 0.89; in 46 patients receiving steroid treatment, the effect size on the MSWS-12 was 0.85
- MCID and MDC not yet reported in MS

**Considerations:**
- The MSWS-12 is recommended as a good indicator of actual walking behavior in people with MS at EDSS 3.5-7.59
- Two versions exist; this summary pertains to the original version. The later version converts scoring for 3 items to 1-3 instead of 1-5; scoring for the rest of the items remains the same

**Normative Data:**
- Mean MSWS-12 for 40 people living with MS = 28.2 (25); in contrast, scores for 20 healthy controls were 22 (5.6)

**Floor / Ceiling:**
- No significant effects in community dwelling MS patients who are ambulatory

**Abbreviations:**
- EDSS: Expanded Disability Status Scale
- T25FW: Timed 25 Foot Walk
- MCID: Minimal Clinical Important Difference
- MDC: Minimal Detectable Change
- 6MWT: 6 Minute Walk Test

**Cut-off Criteria:**

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<tr>
<td>Excellent</td>
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<td>Adequate</td>
<td>0.31-0.59</td>
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<tr>
<td>Poor</td>
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