

**NINDS CDE Notice of Copyright**  
**Multiple Sclerosis Functional Composite (MSFC):**  
**Timed 25 Foot Walk**  
**9-Hole Peg Test**  
**Paced Auditory Serial Addition Test**

<b>Availability:</b>	Freely available on the NMSS website: <a href="#">Click here for the Multiple Sclerosis Functional Composite (MSFC) website.</a>
<b>Classification:</b>	All tests that are a part of the MSFC are Supplemental for MS  The Nine Hole Peg Test and Timed 25 Foot Walk are listed as Core for FA
<b>Short Description of Instrument:</b>	<b>Construct measured:</b> Physical and cognitive disability. <b>Generic vs. disease specific:</b> Disease-specific. <b>Means of administration:</b> In person by a trained examiner. <b>Intended respondent:</b> Patient.
<b>Comments/Special instructions:</b>	<b>Scoring:</b> The Multiple Sclerosis Functional Composite (MSFC) can produce scores for each of the three individual measures as well as a composite score. In addition, there are a variety of ways to calculate scores depending on the nature of the study and sample. The administration and scoring manual are available to download.  <b>Background:</b> The MSFC is a three-part, standardized, quantitative, assessment instrument for use in clinical trials of MS (Cutter et al, 1999) It was developed by a special Task Force on Clinical Outcomes Assessment that had been appointed by the National Multiple Sclerosis Society's Advisory Committee on Clinical Trials of New Agents in Multiple Sclerosis. (Whitaker et al, 1995; Rudick et al, 1996) The MSFC was designed to fulfill three criteria: 1) It should be multidimensional to reflect the varied clinical expression of MS across patients and over time; 2) The dimensions should change relatively independently over time; 3) One component should be a measure of cognitive function. The three components of the MSFC measure leg function/ambulation (timed 25 foot walk) , arm/hand function 9-hole peg test), and cognitive function (Paced Auditory Serial Addition Test - PASAT). The three component measures of the MSFC had been used for some time in MS prior to their being combined into a composite measure. Since its introduction, the MSFC has seen increasing use in both clinical trials and other clinical studies.
<b>References:</b>	Cutter GR et al. Development of a multiple sclerosis functional composite as a clinical trial outcome measure. Brain 1999; 122 (5): 871-82.

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<b>Rationale/ Justification</b>	<p><b>Strengths/Weaknesses:</b> A three-part instrument offering both separate and composite scores, the MSFC provides a versatile assessment method for investigational purposes with the ability to measure patients at various levels of disability, i.e., ambulation at less disabled levels of the EDSS, arm function at more disabled levels, and cognitive function at all levels.</p> <p><b>Psychometric Properties:</b> All three measures making up the MSFC have been shown to have good inter-rater and test-retest reliability. In addition, there is considerable evidence for their validity and sensitivity to clinically relevant change in MS patients. However, performance on the MSFC is sensitive to practice effects, that is, patients often display poorer performance when first tested due to lack of familiarity with the tasks. It is recommended that three or four administrations be given prior to a baseline assessment if accurate (rather than comparative) assessments of change over time are needed.</p> <p><b>Administration:</b> The MSFC measures are administered in person by a trained examiner, who is not necessarily a neurologist or nurse. The total administration time for all three measures varies depending upon the ability of the patient, but is typically in the region of 20-30 minutes.</p>
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