

ORGANIZATION NEWS

Highlights From the Rehabilitation Measures Database

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Measurement Characteristics and Clinical Utility of the 29-Item Multiple Sclerosis Impact Scale

Gail L. Widener, PT, PhD, Diane D. Allen, PT, PhD

The Multiple Sclerosis Impact Scale (MSIS-29) is a 29-item self-report measure comprised of 20 items associated with a physical scale and 9 items associated with a psychological scale.¹ Items question patients (or their proxies) about the impact of multiple sclerosis (MS) on day-to-day life in the last 2 weeks. All items have 5 response options from 1 (not at all) to 5 (extremely). Each of the 2 scales are scored by summing the responses across items, then converting to a 0 to 100 scale, where 100 indicates greater impact of disease on daily function (worse health). The items were selected via a standardized psychometric process: generating a large item pool from patient interviews and professional judgment, then winnowing down to the current items based on pilot and field testing.¹ Reliability and validity evidence have been obtained in multiple samples of people with MS from disability levels of 0 to 9.5 on the Expanded Disability Status Scale. The MSIS-29 is responsive to intervention, with a change score of about 8 on the physical scale or about 6 on the psychological scale having moderate to high sensitivity and specificity for patients, indicating whether they had improved or not. A 7-member MS Outcome Measure Task Force of the neurology section of the American Physical Therapy Association highly recommends this measure for use in this population across disability levels and practice settings (<http://neuropt.org/go/healthcare-professionals/neurology-section-outcome-measures-recommendations/multiple-sclerosis>).

This abbreviated summary provides a review of the psychometric properties of the MSIS-29. A full review of the MSIS-29 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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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: Multiple Sclerosis Impact Scale - 29		Acronym: MSIS-29	Summary Author: Widener G, Allen D												
	Population Reviewed: Multiple Sclerosis	Admin Time: 10 to 15 minutes	Items: 29	Score: 0/100 (min / max)	Required Equipment: MSIS-29 Questionnaire											
Purpose and Administration Instructions: <ul style="list-style-type: none"> Self-report measure of ADL assessed over two weeks¹ Composed of a 20-item physical scale and 9-item psychological scale; scales scored separately Ranges from 1 “not at all” to 5 “extremely”; Higher scores indicate greater impact of the disease 																
Validity: <ul style="list-style-type: none"> <u>Concurrent Validity:</u> <ul style="list-style-type: none"> Excellent correlation with the SF-36 physical, Barthel Index, FAMS,¹ GNDS² Poor³ to Excellent² correlation with EDSS Adequate negative correlation with MSFC² Excellent correlation with fatigue⁴ <u>Discriminant Validity:</u> Differentiated among groups of EDSS scores⁵ 		Reliability: <ul style="list-style-type: none"> <u>Test-retest Reliability:</u> Excellent test-retest reliability^{1,6} <u>Interrater Reliability:</u> <ul style="list-style-type: none"> Adequate between patient and proxies for the physical scale⁷ Poor between patient and proxies for the psychological scale⁷ <u>Internal Consistency:</u> Excellent internal consistency¹ 														
Floor / Ceiling Effects: <ul style="list-style-type: none"> 0.9% scored minimum on physical scale; 1.7% scored minimum on the psychological scale¹ 3.9% scored maximum on physical scale; 1.9% scored maximum on psychological scale¹ 		Scoring Instructions: <ul style="list-style-type: none"> Physical scale items (1-20): sum, subtract 20, divide by 80, and multiply by 100 Psychological scale items (21-29): sum, subtract nine, divide by 36, multiply by 100 														
MCID: <ul style="list-style-type: none"> <u>EDSS range of 0-5:</u> 7 point change on physical scale associated with 1 point change in EDSS⁸ <u>EDSS range 5.5-8:</u> 8 point change in MSIS-29 associated with a 0.5 step change in EDSS⁸ At 6 months, people who believed they had deteriorated had an average 8 point increase; if improved, 13.4 point decrease⁹ 		SEM: <ul style="list-style-type: none"> Physical Scale: 5.2 to 6.0 (community and hospital groups)³ Psychological scale: 6.9 to 8.8³ 														
Score Interpretation: <ul style="list-style-type: none"> Score of zero indicates no impact on daily living 		Abbreviations: ADL: Activities of Daily Living EDSS: Expanded Disability Status Scale FAMS: Functional Activity Measure GNDS: Guys Neurological Disability Scale MCID: Minimal Clinical Important Difference MSFC: Multiple Sclerosis Functional Composite SEM: Standard Error of Measurement SF-36: The Short Form (36) Health Survey														
Considerations: <ul style="list-style-type: none"> Proxy version is available Rasch analysis demonstrated improved ordering of response options on the physical scale when the choices were collapsed to a 1-3 rather than a 1-5 point scale¹⁰ 		<table border="1"> <thead> <tr> <th></th> <th><i>r</i></th> <th>ICC</th> </tr> </thead> <tbody> <tr> <td>Excellent</td> <td>≥ 0.6</td> <td>≥ 0.75</td> </tr> <tr> <td>Adequate</td> <td>0.31-0.59</td> <td>0.40-0.74</td> </tr> <tr> <td>Poor</td> <td>≤ 0.3</td> <td>< 0.4</td> </tr> </tbody> </table>				<i>r</i>	ICC	Excellent	≥ 0.6	≥ 0.75	Adequate	0.31-0.59	0.40-0.74	Poor	≤ 0.3	< 0.4
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