

## ORGANIZATION NEWS

### Highlights From the Rehabilitation Measures Database

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## Measurement Characteristics and Clinical Utility of the Craig Handicap Assessment and Reporting Technique Among Individuals With Spinal Cord Injury

Jason Raad, MS, Jennifer Moore, PT, DHS, NCS

Community reintegration after spinal cord injury (SCI) is usually a rehabilitation goal. Assessment of an individual's level of community reintegration involves understanding multiple variables, including physical independence, cognitive independence, mobility, occupation, social integration, and economic self-sufficiency.<sup>1</sup> The Craig Handicap Assessment and Reporting Technique (CHART) is a patient-reported measure that assesses how individuals with a disability participate as active members of their communities. Each domain is assessed by the 32-item instrument, and has a maximum score of 100 per domain. The total score on the CHART is a summation of each domain score, with a maximum score of 600. Higher scores on the CHART indicate a greater degree of social and community participation. The CHART is free, can be completed in less than 10 minutes, and does not require training prior to administration. Psychometric studies have indicated that the CHART demonstrates adequate to excellent reliability and validity in SCI samples.

This Rehabilitation Measures Database summary provides a review of the psychometric properties of the CHART in the SCI population, including reliability, validity, and normative values. A full review of the CHART and a link to testing documents can be found at [www.rehabmeasures.org](http://www.rehabmeasures.org).

Please address correspondence to [rehabmeasures@ric.org](mailto:rehabmeasures@ric.org).

#### BIBLIOGRAPHY

1. Gontkovsky ST, Russum P, Stokic DS. Comparison of the CIQ and CHART Short Form in assessing community integration in individuals with chronic spinal cord injury: a pilot study. *NeuroRehabilitation* 2009;24:185-92.
2. Tozato F, Tobimatsu Y, Wang CW, Iwaya T, Kumamoto K, Ushiyama T. Reliability and validity of the Craig Handicap Assessment and Reporting Technique for Japanese individuals with spinal cord injury. *Tohoku J Exp Med* 2005;205:357-66.
3. Whiteneck GG, Charlifue SW, Gerhart KA, Overholser JD, Richardson GN. Quantifying handicap: a new measure of long-term rehabilitation outcomes. *Arch Phys Med Rehabil* 1992;73:519-26.
4. Walker N, Mellick D, Brooks CA, Whiteneck GG. Measuring participation across impairment groups using the Craig Handicap Assessment Reporting Technique. *Am J Phys Med Rehabil* 2003;82:936-41.
5. Hall KM, Dijkers M, Whiteneck G, Brooks C, Stuart Krause J. The Craig handicap assessment and reporting technique (CHART): metric properties and scoring. *Top Spinal Cord Inj Rehabil* 1998;4:16-30.
6. Dijkers M. Scoring CHART: survey and sensitivity analysis. *J Am Paraplegia Soc* 1991;14:85-6.

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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	<b>Measure Name:</b>		<b>Acronym:</b>	<b>Summary Authors:</b>																
	Craig Handicap Assessment and Reporting Technique		CHART	Raad J, Moore J																
<b>Population Reviewed:</b>		<b>Admin Time:</b>		<b>Items:</b>	<b>Score:</b>															
Spinal Cord Injury (SCI), others at www.rehabmeasures.org		15 to 30min		32	0/600 (min/max)															
<b>Purpose and Administration Instructions:</b>																				
<ul style="list-style-type: none"> <li>A patient-reported measure that assesses the extent to which people with disabilities are able to function as active members of their communities</li> <li>Assesses 6 domains: physical independence, cognitive independence, mobility, occupation, social integration, and economic self-sufficiency</li> </ul>																				
<b>Required Equipment:</b>		<b>Training Requirement:</b>		<b>Reliability:</b>																
Test form and pen		Review manual		<u>Test-retest over 1 week</u> : <i>Excellent</i> in all domains <sup>3</sup> <u>Test-retest over 2 weeks</u> : <i>Adequate to Excellent</i> in all domains <sup>4</sup> <u>Test-retest (CHART-J) with a 21- to 25-day interval between assessments</u> <sup>2</sup> : <ul style="list-style-type: none"> <li><i>Excellent</i> reliability when assessing each item, except physical independence</li> <li><i>Adequate</i> reliability when assessing physical independence</li> <li><i>Excellent</i> total score reliability</li> </ul>																
<b>Validity:</b>																				
<ul style="list-style-type: none"> <li><i>Adequate to Excellent</i> criterion-related validity between the CIQ and CHART-SF* total scores in patients with SCI<sup>1</sup></li> <li><i>Poor to Excellent</i> criterion-related validity between CIQ and CHART-SF domains in patients with SCI<sup>1</sup></li> <li>Evidence of discriminant validity; employed versus unemployed Japanese patients with SCI**<sup>2</sup></li> </ul>																				
<b>Floor/Ceiling Effects:</b>																				
<ul style="list-style-type: none"> <li>Individuals with any level of injury and classified as ASIA D demonstrated substantial ceiling effects on all CHART subscales<sup>5</sup></li> <li>Individuals with paraplegia and classified as ASIA A, B, or C demonstrated substantial ceiling effects on all CHART subscales<sup>5</sup></li> </ul>																				
<b>Scoring Instructions:</b>																				
<ul style="list-style-type: none"> <li>Each of the 6 domains are scored on a 100-point scale (600 points total); scales are normed against individuals without disabilities living in the community.</li> <li>Scoring information can be found in the instrument's manual.</li> </ul>																				
<b>Considerations:</b>		<b>Abbreviations and cut-off points:</b>																		
<ul style="list-style-type: none"> <li>Proxy responders (caregivers) tend to rate a patient's impairment as more severe.<sup>6</sup></li> <li>Proxy/patient agreement was lowest for the social integration domain.<sup>3</sup></li> <li>Spanish, Japanese, Chinese, Korean, and Italian versions of the CHART are available.</li> </ul>		CHART: Original version (32 items) *CHART-SF: Short Form (19 items) **CHART-J: Japanese version CIQ: Community Integration Questionnaire ASIA: American Spinal Injury Association Classifications																		
		<table border="1"> <thead> <tr> <th colspan="3"><b>Cut-off Criteria:</b></th> </tr> <tr> <th></th> <th><i>r</i></th> <th>ICC</th> </tr> </thead> <tbody> <tr> <td><b>Excellent</b></td> <td>≥0.6</td> <td>≥.75</td> </tr> <tr> <td><b>Adequate</b></td> <td>.31-.59</td> <td>.40-.74</td> </tr> <tr> <td><b>Poor</b></td> <td>≤0.3</td> <td>&lt;0.4</td> </tr> </tbody> </table>				<b>Cut-off Criteria:</b>				<i>r</i>	ICC	<b>Excellent</b>	≥0.6	≥.75	<b>Adequate</b>	.31-.59	.40-.74	<b>Poor</b>	≤0.3	<0.4
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