Outcome Recommendations from the Neurology Section Spinal Cord Injury EDGE Taskforce

Combined Sections Meeting of the American Physical Therapy Association, San Diego, CA
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SCI EDGE Taskforce

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Objectives

• Identify recommended outcome measures to use with individuals with SCI across a variety of patient types including acute, sub-acute, chronic, and motor incomplete and complete SCI.
• Identify recommended outcome measures to use with individuals with SCI across all ICF domains.
• Identify appropriate outcome measures to integrate into your clinical practice when treating individuals with SCI.
• Determine what outcome measures should be included in a physical therapy entry level curriculum related to SCI content.
• Discuss the need for areas of future research in outcome measures for SCI.
EDGE History

“To advance the process of agreeing on the best outcome measures, the Section on Research formed the EDGE Taskforce (for Evaluation Database to Guide Effectiveness) in 2006”

· Edelle Field-Fote, PT, PhD
  Research Section, Chair, EDGE Taskforce

SCI EDGE Taskforce Objectives

• Develop documents for clinicians, educators, and researchers to use that identifies common set of outcome measures across the continuum of care and type of injury in the SCI population.

• Make recommendations for use of outcome measures in the SCI population in the clinical, academic and research settings

Assist clinicians, researchers, and educators select use of outcome measures relative to the SCI population based on a thorough review of psychometric properties and clinical utility.

New for 2012-2013

• Collaboration with Rehabilitation Measures Database
  www.rehabmeasures.org

• “The Rehabilitation Measures Database was developed to help clinicians and researchers identify reliable and valid instruments used to assess patient outcomes during all phases of rehabilitation. The database provides evidence-based summaries that include concise descriptions of each instrument’s psychometric properties, instructions for administering and scoring each assessment as well as a representative bibliography with citations linked to PubMed abstracts.”
### CSM 2012 Goals:
- Select outcome measures to review
- Agree on rating scale
- Select categories to assign rating for each measure
- Assign reviewers
- Understand process for collaboration with Rehabilitation Measures Database

### The Numbers...

<table>
<thead>
<tr>
<th>Constructs by ICF domain</th>
<th>( \text{Body Structure/} )</th>
<th>( \text{Activity} )</th>
<th>( \text{Participation} )</th>
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<td>( \text{Community function} )</td>
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\( \text{Jette 2006} \)
### Measures Reviewed

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### Measures Reviewed

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<td>Performance</td>
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<td>Self Report</td>
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### The Ratings

- **4 Highly Recommend**
- **3 Recommend**
- **2 Reasonable to use, but limited study in target group**
- **1 Do not Recommend**
The Ratings

• 4 Highly Recommend
  excellent psychometrics in target population (e.g. valid and reliable with available data to guide interpretation)
  AND
  excellent clinical utility (e.g. administration is < 20 minutes, requires equipment typically found in the clinic, no copyright payment required, easy to score)

The Ratings

• 3 Recommend
  good psychometrics in target population (e.g. may lack information about reliability, validity, or available data to guide interpretation)
  AND
  good clinical utility (e.g. administration/scoring > 20 minutes, may require additional equipment to purchase or construct)

The Ratings

• 2 Reasonable to use, but limited study in target group
  good or excellent psychometric data demonstrated in at least one population*
  AND
  good or excellent clinical utility (refer to above criteria)
  BUT
  insufficient study in target population to support a stronger recommendation

* a neurologic population that has some impairment similarities to the target group would be most helpful, but other groups such as older adults with balance impairment could also meet this criteria
The Ratings

- Do not Recommend
  - poor psychometrics (e.g. inadequate reliability or validity)
  - AND/OR
  - limited clinical utility (e.g. extensive testing time, unusual or expensive equipment, ongoing costs to administer, etc.)

The Categories

- Acuity
  - Acute (0-3mo)
  - Subacute (3-6mo)
  - Chronic (>6mo)
- ASIA Impairment Scale (AIS) Classification
  - AIS A/B (Motor Complete)
  - AIS C/D (Motor Incomplete)
- Education (specific to SCI curriculum)
  - Recommend students learn (Y/N)
  - Recommend students exposed (Y/N)
- Research
  - Recommend for use in research

Steps to Reach Consensus

- Primary Reviewer – Created EDGE document and created (or reviewed if existing) Rehabilitation Database Measures Summary
- Secondary Reviewer – Reviewed primary reviewers work and primary and secondary reviewer come to consensus on ratings
- Taskforce Consensus – Taskforce completes a survey looking at ratings for each measure and stating if they agree/disagree with ratings and why
- Survey results compiled. Disagreements discussed/resolved
## Constructs by ICF domain

### Body Structure/Function:
- **Pain**
  - Numeric Pain Rating Scale (recommend/highly recommend)
- **Cardiovascular**
  - No recommended or highly recommended measures
- **Sensory**
- **Motor Function/Strength**
  - ISNCSCI/ASIA Impairment Scale (highly recommend)
  - Handheld Myometry (highly recommend)
  - Manual Muscle Test (recommend)
- **Muscle Tone**
  - No recommended or highly recommended measures

### Activity:
- **Gait**
- **Balance**
- **Wheelchair mobility**
- **ADLs**
- **Functional mobility**

### Participation:
- Community function
- Domestic Life
- Health and wellness
- Leisure/Recreational activities
- Quality of life
- Reintegration to community
- Self Care
- Social function
- Work

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## Body Structure Function:

### Pain:
- Numeric Pain Rating Scale (recommend/highly recommend)

### Cardiovascular:
- No recommended or highly recommended measures

### Strength/Motor Function:
- ISNCSCI/ASIA Impairment Scale (highly recommend)
- Handheld Myometry (highly recommend)
- Manual Muscle Test (recommend)

### Muscle Tone:
- No recommended or highly recommended measures

## Activity:

Recommend/Highly Recommend in ≥3 of 5 categories:

### Balance:
- Berg Balance Scale

### Gait:
- 10m walk test
- 6 minute walk test
- Spinal Cord Injury Functional Ambulation Inventory (SCI-FAI)
- Time Up and Go
- Walking Index for Spinal Cord Injury (WISCI II)

### ADLs:
- FIM
- SCIM/SCIM III
Activity:
Recommend in ≥3 of 5 categories:

**UE Function:**
- Capabilities of UE Functioning Instrument (CUE)
- Graded and Redefined Assessment of Sensibility Strength and Prehension (GRASSP)

**Wheelchair Mobility/Skills:**
- No recommended or highly recommended measures

Participation:
Recommend in ≥3 of 5 categories:

- Craig Handicap Assessment and Reporting Technique (CHART)
- Craig Hospital Inventory of Environmental Factors (CHIEF)
- Life Satisfaction Questionnaire (LISAT-9)
- Needs Assessment Checklist (NAC)
- Reintegration to Normal Living Index (RNL)

Participation:
Recommend in ≥3 of 5 categories (continued):

- Satisfaction with Life Scale (SWLS, Deiner Scale)
- Medical Outcomes Study Short Form 36 (SF-36)
- Sickness Impact Profile 68 (SIP 68)
- World Health Organization Quality of Life – BREF (WHOQOL-BREF)
Participation Measure Examples:

**Satisfaction with Life Scale**
- 5 items
- Self rating of satisfaction with life
- Rated 1-7 (strongly disagree to strongly agree)
- 5 ≤ minutes to complete

**Needs Assessment Checklist**
- 216 items across 9 domains
- Self rating of perceived independence in each area
- Completed prior to discharge from inpatient rehabilitation to determine rehab needs
- 60 ≤ minutes to complete

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**Acute Injury (0-3 months):**

**Highly Recommended**
- Handheld Myometry
- ISNCSI/ASIA Impairment Scale
- 10m Walk Test
- 6-min Walk Test
- Timed Up and Go
- Walking Index for Spinal Cord Injury (WISCI II)

**Recommended**
- Numeric Pain Rating Scale
- Manual Muscle Test
- Berg Balance Scale
- Spinal Cord Injury Functional Ambulation Inventory (SCI-FAI)
- FIM
- SCIM III
- Needs Assessment Checklist

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**Subacute Injury (3-6 months):**

**Highly Recommended**
- Handheld Myometry
- ISNCSI/ASIA Impairment Scale
- 10m Walk Test
- 6-min Walk Test
- Timed Up and Go

**Recommended**
- Numeric Pain Rating Scale
- Manual Muscle Test
- Berg Balance Scale
- SCI-FAI
- WISCI II
- FIM
- SCIM
- Needs Assessment Checklist
- Sickness Impact Profile (SIP 68)
Chronic Injury (>6 months)

**Highly Recommended**
- Numeric Pain Rating Scale
- Handheld Myometry
- ISNCSCI/ASIA Impairment Scale
- 10m Walk Test
- 6-min Walk Test
- World Health Organization Quality of Life-BREF (WHOQOL-BREF)

Chronic Injury (>6 months)

**Recommended**
- Multidimensional Pain Inventory, SCI Version
- Wheelchair Users Shoulder Pain Index (WUSPI)
- Manual Muscle Test
- Berg Balance Scale
- SCI-FAI
- SCI Ambulation Profile
- Timed Up and Go Test
- WISCI II
- Capabilities of UE Functioning Instrument
- GRASSP
- FIM
- SCIM III
- Life Satisfaction Questionnaire
- Reintegration to Normal Living Index
- Satisfaction with Life Scale (Deiner)
- SF-36
- SIP 68
- Craig Handicap Assessment and Reporting Technique (CHART)
- Craig Hospital Inventory of Environmental Factors (CHIEF)

Entry Level Education Recommendations

**Students Exposed and Learn to Administer**
- 10m Walk Test
- 6-min Walk Test
- Berg Balance Scale
- FIM
- Handheld Myometry
- AIS
- Manual Muscle Test
- Numeric Pain Rating Scale
- Timed Up and Go
Entry Level Education Recommendations

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<tr>
<th>Students Exposed Only</th>
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<tbody>
<tr>
<td>• Modified Ashworth Scale</td>
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<tr>
<td>• Capabilities of UE Functioning Instrument</td>
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<tr>
<td>• CHART</td>
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<tr>
<td>• Dynamic Gait Index</td>
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<tr>
<td>• Functional Gait Assessment</td>
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<td>• Multidimensional Pain Inventory, SCI Version</td>
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<td>• Penn Spasm Frequency Scale</td>
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<td>• Reintegration to Normal Living Index</td>
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<td>• WHOQOL-BREF</td>
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Limited Research Available

- UE function
- Cardiovascular
- Wheelchair skills
- High level balance
- Acute SCI (0-3 months post)
- Muscle tone

Additional handouts from the presentation will be available following CSM
References


