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Task Force Objectives:

- Develop documents for clinicians, educators, and researchers to use that identify common set of outcome measures across the continuum of care and type of injury in the TBI population.
- Make recommendations for use of outcome measures in the TBI population in the clinical, academic and research settings.
- Assist clinicians, researchers, and educators to select use of outcome measures relative to the TBI population based on a thorough review of psychometric properties and clinical utility.

Task Force Process:

- Day-long initial meeting at CSM February 2012 in Chicago, Illinois
 - Agreement on outcome measures (OM) to consider
 - Original list compiled from literature review, measures recommended by the Common Data Elements TBI Workgroup, measures recommended by APTA Educational consensus group, measures in Rehabilitation Measures Database
 - Agreement on categories of OM to consider across the ICF
 - Body Structure and Function
 - Aerobic capacity/endurance
 - Ataxia
 - Cardiovascular/pulmonary status
 - Cognition
 - Coordination
 - Dizziness
 - Dual-tasks
 - Fatigue
 - Flexibility
 - Muscle performance
 - Muscle tone/spasticity
 - Pain
 - Sensory integration
 - Somatosensation
 - Activity
 - Balance/Falls
 - Bed mobility
 - Gait (include stairs)
 - High level mobility
 - Transfers
 - Wheelchair skills
 - Participation
 - Community function
 - Driving
 - Health and wellness
 - Home management
 - Leisure/Recreational activities
 - Life satisfaction
 - Quality of life
 - Reintegration to community
 - Role function
 - Shopping
 - Social function
 - Work
 - Agreement on OMs to review

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- Agreement on examination criteria for OMs which included a modification of original EDGE form developed by APTA Section on Research
- Initial discussion of categories upon which to rate OMs. Final decision made in future conference call post CSM 2012. Final recommendation categories:
 - Practice settings (acute care/emergency department, in-patient rehab, outpatient (including day rehab and transitional living), long term acute care/skilled nursing facility and home health)
 - Ambulatory status (complete independence, mild dependence, moderate dependence, severe dependence—see below)
 - Recommend for inclusion in entry level PT curricula
 - Students learn to administer (Y/N)
 - Students exposed to measure (Y/N)
 - Recommended for use in research studies (Y/N)
- Discussion and modification of rating scale (see below for rating scale), primary areas for rating
 - Strength of psychometrics
 - Clinical utility
- Introduction to process for collaborating with Rehabilitation Measures Database (RMD)
 - EDGE groups partnering with RMD (www.rehabmeasures.org).
 - As EDGE groups review an OM, task force members review the measure and the summaries in RMD (see primary review process below). If no summary in RMD, summary created by EDGE group.
 - EDGE document and RMD documents designed to be used together. EDGE document provides the recommendation with supporting comments and complete details of measure housed on RMD. RMD will continue to be updated.
- Assignment of primary and secondary reviewers to final list of measures
- Review Process
 - Primary Review – Primary reviewer reviews the OM and evaluates it for strength of psychometrics and clinical utility. Primary reviewer also reviews RMD summary and edits or adds additional info to it. Primary reviewer creates EDGE document.
 - Secondary Review – Secondary reviewer reviews work of primary reviewer, and they reach consensus on recommendations.
 - Task force consensus – All recommendations placed in a survey. Task force completes survey on whether they agree or disagree on ratings and why.
 - Survey reviewed by Karen McCulloch and Anna de Joya; results of survey distributed to task force members for discussion and final consensus. (80% consensus required)
- Final Results presented at CSM in San Diego, CA, January 2013

Rating Scale

<p>4</p>	<p>Highly Recommend</p>	<ul style="list-style-type: none"> • excellent psychometrics in target population (e.g. valid and reliable with available data to guide interpretation) <p style="text-align: center;">AND</p> <ul style="list-style-type: none"> • excellent clinical utility (e.g. administration is \leq 20 minutes, requires equipment typically found in the clinic, no copyright payment required, easy to score)
<p>3</p>	<p>Recommend</p>	<ul style="list-style-type: none"> • good psychometrics in target population (e.g. may lack information about reliability, validity, or available data to guide interpretation) <p style="text-align: center;">AND</p> <ul style="list-style-type: none"> • good clinical utility (e.g. administration/scoring > 20 minutes, may require additional equipment to purchase or construct)
<p>2</p>	<p>Reasonable to use, but limited study in target group</p>	<ul style="list-style-type: none"> • good or excellent psychometric data demonstrated in at least one population*, <p style="text-align: center;">AND</p> <ul style="list-style-type: none"> • good or excellent clinical utility (refer to above criteria) <p style="text-align: center;">BUT</p> <ul style="list-style-type: none"> • insufficient study in target population to support a stronger recommendation
<p>1</p>	<p>Do not Recommend</p>	<ul style="list-style-type: none"> • poor psychometrics (e.g. inadequate reliability or validity) <p style="text-align: center;">AND/OR</p> <ul style="list-style-type: none"> • limited clinical utility (e.g. extensive testing time, unusual or expensive equipment, ongoing costs to administer, etc.)

Ambulatory Status

I-Complete Independence	Independent ambulation on level and unlevel surfaces without assistive device
II-Mild dependence	Modified independent (requires assistive device) or requires supervision* on level surfaces only and requires supervision for unlevel surfaces
III-Moderate dependence	Requires intermittent or continuous manual assistance of one person on level and unlevel surfaces
IV-Severe dependence	Unable to ambulate or requires more than one person to assist with ambulation

*supervision may be required for physical or cognitive reasons

*Adapted from Functional Ambulation Category (Holden, 1994)

List of Outcome Measures by Alphabetical Order

10 Meter Walk Test (10MWT)
2 Minute Walk Test (2MWT)
6 Minute Walk Test (6MWT)
Action Research Arm Test (AART)
Activities Specific Balance Confidence Scale (ABC)
Activity Measure for Post-Acute Care (AM-PAC)
Agitated Behavior Scale
Apathy Evaluation Scale
Assessment of Life Habits (LIFE-H)
Awareness Questionnaire
Balance Error Scoring System (BESS)
Balance Evaluation Systems Test (BEST)
Barthel Index
Berg Balance Scale (BBS)
Brunel Balance Assessment (BBA)
Canadian Occupational Performance Measure (COPM)
Clinical Test of Sensory Interaction and Balance (CT-SIB)
Cognitive Log (Cog-Log)
Coma Recovery Scale-Revised (CRS-R)
Community Balance and Mobility Scale (CB&M)
Community Integration Measure (CIM)
Community Integration Questionnaire I (CIQ)
Community Integration Questionnaire II (CIQ II)
Craig Handicap Assessment and Reporting Technique-Short Form (CHART-SF)
Craig Hospital Inventory of Environmental Factors-Long and Short Form (CHIEF)
Disability Rating Scale (DRS)
Disorders of Consciousness Scale (DOCS)
Dizziness Handicap Inventory (DHI)
Dynamic Gait Index (DGI)
EuroQOL
Four Functional Tasks for Wheelchair
Four Square Step Test (FSST)
Fullerton Advanced Balance Scale (FABS)
Function In Sitting Test (FIST)
Functional Ambulation Category (FAC)
Functional Assessment Measure (FAM)
Functional Gait Assessment (FGA)
Functional Independence Measure (FIM)
Functional Reach Test/Modified Functional Reach Test (FRT/mFRT)

Functional Self-Assessment (FSA)
Functional Status Examination (FSE)
Glasgow Coma Scale (GCS)
Glasgow Outcome Scale-Extended (GOS-E)
Global Fatigue Index (GFI)
High-Level Mobility Assessment (Hi-MAT)
Home and Community Environment (HACE)
Impact on Participation and Autonomy Questionnaire (IPAQ)
Life Satisfaction Questionnaire-9 (LISAT-9)
Mayo Portland Adaptability Inventory-4 (MPAI-4)
Medical Outcomes Study Short Form (SF-36), version 2
Mini Mental Status Exam (MMSE)
Modified Ashworth Scale (MAS)
Modified Fatigue Impact Scale (MFIS)
Montreal Cognitive Assessment (MOCA)
Moss Attention Rating Scale (MARS)
Motivation for Traumatic Brain Injury Rehabilitation Questionnaire (MOT-Q)
Neurological Outcome Scale for Traumatic Brain Injury (NOS-TBI)
Neuro-Quality of Life (Neuro QOL)
Orientation Log (O-Log)
Participation Assessment with Recombined Tools-Objective (PART-O)
Participation Measure for Post-Acute Care (PM-PAC)
Participation Objective, Participation Subjective (POPS)
Participation Survey of Mobility Limited people (PARTS-M)
Patient Competency Rating Scale
Patient Health Questionnaire (PHQ)
Pittsburgh Rehabilitation Participation Scale (PRPS)
Quality of Life after Brain Injury (QOLIBRI)
Quebec User Evaluation of Satisfaction with Assistive Technology (QUEST)
Rancho Levels of Cognitive Functioning
Reintegration to Normal Life Index (RNLI)
Rivermead Mobility Index
Satisfaction With Life Scale (SWLS)
Sensory Organization Test (SOT)
Sensory Stimulation Assessment Measure (SSAM)
Sickness Impact Profile – 68 (SIP-68)
Supervision Rating Scale (SRS)
Sydney Psychosocial Reintegration Scale (SPRS)
Timed Up and Go (TUG)
Timed Up and Go-Cognitive (TUG-Cog)
Tinetti Falls Efficacy Scale (FES)
Trunk Control Test (TCT)
Trunk Impairment Scale (TIS)
Walking and Remembering Test (WART)
Walking While Talking Test (WWTT)

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Western Neuro Sensory Stimulation Profile (WNSSP)
Wheelchair Skills Test (WST)
World Health Organization Quality of Life-BREF (WHO QOL-BREF)
Wolf Motor Function Test (WMFT)

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Body Structure and Function	Activity	Participation
Agitated Behavior Scale Apathy Evaluation Scale Awareness Questionnaire Cognitive Log Coma Recovery Scale-Revised Disorders of Consciousness Scale Dizziness Handicap Inventory Functional Self Assessment Functional Status Examination Glasgow Coma Scale Glasgow Outcome Scale-Extended Global Fatigue Index Mini Mental Status Exam Modified Ashworth Scale Modified Fatigue Impact Scale Montreal Cognitive Assessment Moss Attention Rating Scale Motivation for Traumatic Brain Injury Rehabilitation Questionnaire Neurological Outcome Scale for Traumatic Brain Injury Orientation Log Patient Competency Rating Scale Patient Health Questionnaire Ranchos Levels of Cognitive Functioning Sensory Stimulation Assessment Measure Western Neuro Sensory Stimulation Profile	10 Meter Walk Test 2 Minute Walk Test 6 Minute Walk Test Action Research Arm Test Activity Measure for Post Acute Care Balance Error Scoring System Balance Evaluation Systems Test Barthel Index Berg Balance Scale Brunel Balance Assessment Clinical Test of Sensory Interaction and Balance Community Balance and Mobility Scale Dynamic Gait Index Four Functional Tasks for Wheelchair Four Square Step Test Fullerton Advanced Balance Scale Function In Sitting Test Functional Ambulation Category Functional Assessment Measure Functional Gait Assessment Functional Independence Measure Functional Reach Test/Modified Functional Reach Test High-Level Mobility Assessment Rivermead Mobility Index Sensory Organization Test Timed Up and Go Timed Up and Go-Cognitive Trunk Control Test	Activities Specific Balance Confidence Scale Assessment of Life Habits Canadian Occupational Performance Measure Community Integration Measure Community Integration Questionnaire I Community Integration Questionnaire II Craig Handicap Assessment and Reporting Technique-Short Form Craig Hospital Inventory of Environmental Factors-Long and Short Form Disability Rating Scale EuroQOL Home and Community Environment Impact on Participation and Autonomy Questionnaire Life Satisfaction Questionnaire-9 Mayo Portland Adaptability Inventory-4 Medical Outcomes Study Short Form (SF-36), version 2 Neuro-QOL Participation Assessment with Recombined Tools-Objective Participation Measure for Post-Acute Care Participation Objective, Participation Subjective Participation Survey of Mobility Limited people Pittsburgh Rehabilitation Participation Scale Quality of Life after Brain Injury Quebec User Evaluation of Satisfaction with Assistive Technology Reintegration to Normal Life Index

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	Trunk Impairment Scale Walking and Remembering Test Walking While Talking Wheelchair Skills Test Wolf Motor Function Test	Satisfaction With Life Scale Sickness Impact Profile - 68 Supervision Rating Scale Sydney Psychosocial Reintegration Scale Tinetti Falls Efficacy Scale WHO Quality of Life-BREF
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Instrument name: 10 Meter Walk Test (10MWT)					
Reviewer: Katie Hays, PT, DPT				Date of review: 4/9/12	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:		<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input checked="" type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:		<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: 10 meter walk test (10MWT)					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED			X		Tested in stroke (Smith and Baer, 1999)
In-Patient Rehab		X			Tested in SCI, hip fracture, TBI (Lemay and Nadeau, 2010, Latham et al, 2008, Moseley et al, 2004, VanLoo et al, 2004)
Outpatient (including Day rehab, Transitional living)		X			Tested in SCI, stroke, MS, Parkinson's (Jackson et al, 2008, Flansbjerg et al, 2005, Paltamaa et al, 2007, Steffen and Seney, 2008)

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LTAC/SNF			X			Not tested in this setting, but foreseeable to use
Home Health			X			Not tested in this setting, but feasible to use
Overall Comments:	Minimal testing in TBI population, however good to excellent clinical utility and psychometric data in other diagnoses.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence		X				Normed data available (Bohannon, 1997), initial studies in TBI (VanLoo et al, 2004, Moseley et al, 2004)
II-Mild dependence			X			Responsive to change in individuals with iSCI with good walking capacity (vanHedel et al, 2006)
III-Moderate dependence			X			
IV-Severe dependence				X		Not appropriate in non-ambulatory population
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	Patient must be able to walk 10 meters without physical assistance and follow 1-2 step commands.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Used in a wide variety of populations	
	X		X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X					
Additional information on this measure can be found at www.rehabmeasures.org : 10 meter walk test (10MWT)						

References

Bohannon, R. W. (1997). "Comfortable and maximum walking speed of adults aged 20-79 years: reference values and determinants." *Age Ageing* 26(1): 15-19. [Find it on PubMed](#)

Flansbjerg, U. B., Holmback, A. M., et al. (2005). "Reliability of gait performance tests in men and women with hemiparesis after stroke." *J Rehabil Med* 37(2): 75-82. [Find it on PubMed](#)

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Jackson, A. B., Carnel, C. T., et al. (2008). "Outcome measures for gait and ambulation in the spinal cord injury population." *J Spinal Cord Med* 31(5): 487-499. [Find it on PubMed](#)

Latham, N., Mehta, V., et al. (2008). "Performance-based or self-report measures of physical function: which should be used in clinical trials of hip fracture patients?" *Archives of physical medicine and rehabilitation* 89(11): 2146-2155. [Find it on PubMed](#)

Moseley, A.M., Lanzarone, S. et al. (2004). "Ecological validity of walking speed assessment after traumatic brain injury. A pilot study." *J Head Trauma Rehabil* 19(4): 341-348.

Paltamaa, J., Sarasoja, T., et al. (2007). "Measures of physical functioning predict self-reported performance in self-care, mobility, and domestic life in ambulatory persons with multiple sclerosis." *Archives of physical medicine and rehabilitation* 88(12): 1649-1657. [Find it on PubMed](#)

Perera, S., Mody, S., et al. (2006). "Meaningful change and responsiveness in common physical performance measures in older adults." *Journal of the American Geriatrics Society* 54(5): 743-749. [Find it on PubMed](#)

Smith, M., & Baer, G. (1999). Achievement of simple mobility milestones after stroke. *Archives of physical medicine and rehabilitation*, 80(4), 442.

Steffen, T. and Seney, M. (2008). "Test-retest reliability and minimal detectable change on balance and ambulation tests, the 36-Item Short-Form Health Survey, and the Unified Parkinson Disease Rating Scale in people with parkinsonism." *Physical Therapy* 88(6): 733. [Find it on PubMed](#)

van Hedel, H., Wirz, M., et al. (2006). "Improving walking assessment in subjects with an incomplete spinal cord injury: responsiveness." *Spinal Cord* 44(6): 352-356.

van Loo, M.A., Moseley, A.M. et al (2004). "Test-re-test reliability of walking speed, step length and step width measurement after traumatic brain injury: a pilot study." *Brain Injury* 18(10): 1041-1048.

Instrument name: 2 Minute Walk Test (2MWT)					
Reviewer: Katie Hays, PT, DPT				Date of review: 3/2/12	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity _____ Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input checked="" type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:		<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input checked="" type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:		<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: 2 Minute Walk Test					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED			X		Less tiring than the 6 minute walk test
In-Patient Rehab			X		Tested in IP geriatrics, lower limb amputation (Brooks et al 2006, Brooks et al 2002)
Outpatient (including Day rehab, Transitional living)			X		Tested in lower limb amputation, chronic stroke (Brooks et al 2002, Rossier and Wade, 2001)
LTAC/SNF			X		

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Home Health			X			Not tested in home health, but appropriate with a flat measureable walking surface
Overall Comments:						
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence			X			
II-Mild dependence			X			
III-Moderate dependence				X		Not appropriate if individual needs physical assistance to walk 2 minutes
IV-Severe dependence				X		Not appropriate in non-ambulatory population
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	Must be able to follow 1-2 step directions for the test and attend to task for 2 minutes, no other cognitive limitations					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Per Rossier and Wade, 2001. 6MWT has better evidence to support its use in this population, some redundancy in learning to administer this test as well.	
		X	X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				Per Rossier and Wade, 2001	
Additional information on this measure can be found at www.rehabmeasures.org : 2 Minute Walk Test						

References

Brooks, D., Davis, A. M., et al. (2006). "Validity of 3 physical performance measures in inpatient geriatric rehabilitation." Arch Phys Med Rehabil 87(1): 105-110. [Find it on PubMed](#)

Brooks, D., Hunter, J. P., et al. (2002). "Reliability of the two-minute walk test in individuals with transtibial amputation." Arch Phys Med Rehabil 83(11): 1562-1565. [Find it on PubMed](#)

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[Brooks D., Parsons, J. et al. \(2004\). "The two-minute walk test as a measure of functional capacity in cardiac surgery patients." Arch Phys Med Rehabil 85:1525-1530.](#)

Kosak, M. and Smith, T. (2005). "Comparison of the 2-, 6-, and 12-minute walk tests in patients with stroke." J Rehabil Res Dev 42(1): 103-107. [Find it on PubMed](#)

Lemay J.F. and Nadeau S. (2010). "Standing balance assessment in ASIA D paraplegic and tetraplegic participants: concurrent validity of the Berg Balance Scale." Spinal Cord 48: 245-250.

Leung, A. S., Chan, K. K., et al. (2006). "Reliability, validity, and responsiveness of a 2-min walk test to assess exercise capacity of COPD patients." Chest 130(1): 119-125. [Find it on PubMed](#)

Rossier, P. and Wade, D. T. (2001). "Validity and reliability comparison of 4 mobility measures in patients presenting with neurologic impairment." Arch Phys Med Rehabil 82(1): 9-13. [Find it on PubMed](#)

Instrument name: 6 Minute Walk Test (6MWT)					
Reviewer: Katie Hays, PT, DPT				Date of review: 5/9/12	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input checked="" type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:		<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input checked="" type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:		<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: 6 minute walk test (6MWT)					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED			X		
In-Patient Rehab		X			Tested in stroke, iSCI, TBI (Fulk and Echternach, 2008, Scivoletto et al, 2011, Mossberg, 2003)
Outpatient (including Day rehab, Transitional living)		X			Tested in iSCI, PD, elderly, CVA, COPD, and TBI (Lam et al, 2007, Steffen et al, 2002, Perera et al, 2006, Flansbjerg et al, 2005, Redelmeier et al, 1997, Mossberg,

						2003))
LTAC/SNF			X			
Home Health					X	No studies in this setting, feasibility may be limited by available space.
Overall Comments:						
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence	X					Good test retest reliability in TBI population (Van Loo et al, 2004, Mossberg, 2003), excellent psychometrics in multiple other neurological populations (Eng et al, 2004, Flansbjerg et al, 2005, Fulk et al, 2008)
II-Mild dependence		X				
III-Moderate dependence			X			Must be able to walk without physical assistance
IV-Severe dependence				X		Must be able to walk without physical assistance
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	Must walk without physical assistance (bracing is OK) and attend to the task for a period of 6 minutes. Has been used to assess gait speed in the TBI population (Mossberg, 2003).					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Used in multiple patient populations	
	X		X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				Per Perera et al, 2006	
Additional information on this measure can be found at www.rehabmeasures.org: 6 minute walk test (6MWT)						

References

- Eng, J. J., Dawson, A. S., et al. (2004). "Submaximal exercise in persons with stroke: test-retest reliability and concurrent validity with maximal oxygen consumption." *Arch Phys Med Rehabil* 85(1): 113-118. [Find it on PubMed](#)
- Flansbjerg, U. B., Holmback, A. M., et al. (2005). "Reliability of gait performance tests in men and women with hemiparesis after stroke." *J Rehabil Med* 37(2): 75-82. [Find it on PubMed](#)
- Fulk, G. D. and Echternach, J. L. (2008). "Test-retest reliability and minimal detectable change of gait speed in individuals undergoing rehabilitation after stroke." *J Neurol Phys Ther* 32(1): 8-13. [Find it on PubMed](#)
- Lam, T., Noonan, V., et al. (2007). "A systematic review of functional ambulation outcome measures in spinal cord injury." *Spinal Cord* 46(4): 246-254.
- Mossberg KA. (2003). "Reliability of a timed walk test in persons with acquired brain injury." *Am J Phys Med Rehabil.* 82(5):385-390.
- Perera, S., Mody, S., et al. (2006). "Meaningful change and responsiveness in common physical performance measures in older adults." *Journal of the American Geriatrics Society* 54(5): 743-749. [Find it on PubMed](#)
- Redelmeier, D., Bayoumi, A., et al. (1997). "Interpreting small differences in functional status: the six minute walk test in chronic lung disease patients." *American journal of respiratory and critical care medicine* 155(4): 1278. [Find it on PubMed](#)
- Scivoletto, G., Tamburella, F., et al. (2011). "Validity and reliability of the 10-m walk test and the 6-min walk test in spinal cord injury patients." *Spinal Cord.* [Find it on PubMed](#)
- Steffen, T. and Seney, M. (2008). "Test-retest reliability and minimal detectable change on balance and ambulation tests, the 36-Item Short-Form Health Survey, and the Unified Parkinson Disease Rating Scale in people with parkinsonism." *Physical Therapy* 88(6): 733. [Find it on PubMed](#)
- VanLoo, M.A., Moseley, A.M., et al (2004). "Test-re-test reliability of walking speed, step length and step width measurement after traumatic brain injury: a pilot study." *Brain Injury.* 18(10):1041-1048.

Instrument name: Action Research Arm Test (ARAT)					
Reviewer: Irene Ward, PT, DPT, NCS				Date of review: May 25, 2012	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input checked="" type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input checked="" type="checkbox"/> Other: grasp, grip, pinch, gross movement of upper extremity		<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:		<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Action Research Arm Test (ARAT)					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED			X		Utility of this test may be limited in the ED or bedside acute care due to the amount of equipment needed to administer the test and limited time available to treat and evaluate.
In-Patient Rehab			X		Not tested in patients with acute TBI, but shown to have excellent

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						reliability in patients with chronic TBI. Data collected related to stroke.
Outpatient (including Day rehab, Transitional living)		X				
LTAC/SNF		X				
Home Health		X				
Overall Comments:	<ul style="list-style-type: none"> Adequate to excellent psychometric data in patients with chronic TBI. Excellent clinical utility. Requires approximately 10 minutes to administer. Due to specific requirements of the objects needed to complete the test, it is recommended that clinicians create a testing kit to ensure consistency in testing procedure. 					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	<ul style="list-style-type: none"> Testing occurs in seated position therefore the individual's ambulation status does not need to be considered for administration of this test. Not appropriate for patients with disorders of consciousness. Recommend that the patient be able to follow multi-step commands. This can be a problem for cognitively impaired patients such as those with severe TBI. 					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO		
	X		X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				The ARAT is a responsive and valid measure of upper limb functional limitation and is a useful measure for use in upper limb	

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			rehabilitation and clinical research (McDonnell, 2008).
Additional information on this measure can be found at www.rehabmeasures.org : Action Research Arm Test (ARAT)			

References

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van der Lee, J. H., Roorda, L. D., et al. (2002). "Improving the Action Research Arm test: a unidimensional hierarchical scale." *Clin Rehabil* 16(6): 646-653. [Find it on PubMed](#)

Instrument name: Activities-Specific Balance Confidence Scale (ABC)					
Reviewer: Sue Saliga PT, DHSc, CEEAA				Date of review: 6/19/2012	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:		<input checked="" type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input checked="" type="checkbox"/> Gait (include stairs) <input checked="" type="checkbox"/> High Level mobility <input checked="" type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:		<input checked="" type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input checked="" type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input checked="" type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Activities Specific Balance Confidence Scale (ABC)					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED			X		
In-Patient Rehab			X		
Outpatient (including Day rehab, Transitional living)			X		
LTAC/SNF			X		
Home Health			X		
Overall Comments:	Limited psychometric data in TBI however in other populations (CVA, PD and MS) there is more data with good results.				

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Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence			X			
II-Mild dependence			X			
III-Moderate dependence				X		Not validated
IV-Severe dependence				X		Not validated
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	Requires cognitive skills to self-evaluate in abstract situations					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	While not validated in the TBI population, exposure to the tool will be beneficial for other populations.	
		X	X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X					
Additional information on this measure can be found at www.rehabmeasures.org : Activities Specific Balance Confidence Scale (ABC)						

References

Inness, E.L., Howe, J., Niedhziej-Szwedo E., Jaglal, S.B., McIlroy, W.E., Verrier, M.C., (2011) Measuring balance and mobility after traumatic brain injury: Validation of the Community Balance and Mobility Scale (CB&M).” *Physiother Can* 63(2) 199-208.

Instrument name: Activity Measure for Post-Acute Care (AM-PAC)					
Reviewer: Tammie Keller Johnson PT, DPT, MS				Date of review: 5/25/12	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input checked="" type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input checked="" type="checkbox"/> Other: Communication, Print information, New Learning	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input checked="" type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input checked="" type="checkbox"/> Transfers <input checked="" type="checkbox"/> Wheelchair skills <input checked="" type="checkbox"/> Other: Bend/ Stand /Carry			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input checked="" type="checkbox"/> Social function <input type="checkbox"/> Work <input checked="" type="checkbox"/> Other: Grooming and Hygiene, Feeding and Meal Prep, Dressing, Instrumental	
Link to rehabmeasures.org summary: Activity Measure for Post Acute Care					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	Only appropriate for higher level clients at this level.
In-Patient Rehab			X		
Outpatient (including Day rehab, Transitional living)				X	Patients typically seen in an outpatient rehabilitation setting might encounter ceiling effects with the Daily Activity scale in the AMPAC.

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LTAC/SNF			X			
Home Health					X	
Overall Comments:						
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	Placed lower secondary to no specific TBI data. Several articles refer to inpatient rehabilitation population with a portion of neurological patients some being TBI. The AM-PAC and AM-PAC-CAT are self-report surveys therefore the completion of this survey is not contingent upon the individuals' ambulation status.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO		
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				No current research on TBI specifically but research include neurological patients such as stroke, Parkinson's disease and TBI grouped together. AMP-PAC has demonstrated good to excellent psychometric properties. Although not specifically tested in a large group of individuals with TBI, the ease of administration and the design to cover the post-acute recovery of individuals with TBI may make this a helpful tool for future research.	
Additional information on this measure can be found at www.rehabmeasures.org : Activity Measure for Post Acute Care						

References

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- Coster, W. J., Haley, S. M., et al. (2006). "Measuring patient-reported outcomes after discharge from inpatient rehabilitation settings." *J Rehabil Med* 38(4): 237-242. Find it on PubMed
- Haley, S.M., Siebens, H., Coster, W.J., Tao, W., Black-Schaffer, R.M., Gandek, B., Sinclair, S.J., Pengshen, N. (2006) "Computerized adaptive testing for follow-up after discharge from inpatient rehabilitation: I. Activity Outcomes." *Arch Phys Med Rehabil.* 87:1033-1042.
- Haley, S.M., Coster, W.J., Andres, P.L., Ludlow, L.H., Ni, P., Bond, T.L.Y., Sinclair, S.J., Jette, A.M. (2004) "Activity outcome measurement for postacute care." *Medical Care.* 42(1)Suppl:149-156
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- Jette, A. M., Haley, S. M., et al. (2007). "Prospective evaluation of the AM-PAC-CAT in outpatient rehabilitation settings." *Phys Ther* 87(4): 385-398.
- Latham, N. K., Mehta, V., et al. (2008). "Performance-based or self-report measures of physical function: which should be used in clinical trials of hip fracture patients?" *Arch Phys Med Rehabil* 89(11): 2146-2155.

Instrument name: Agitated Behavior Scale					
Reviewer: Karen McCulloch, PT, PhD, NCS				Date of review: 6/10/12	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input checked="" type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input checked="" type="checkbox"/> Other: behavioral observations associated with agitation (disinhibition, aggression, lability)	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input checked="" type="checkbox"/> Other: activities generally counter to rehabilitation goals such as pulling at tubes, wandering, etc.			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Agitated Behavior Scale					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED		X			
In-Patient Rehab		X			This scale is beneficial in this setting in order to assist to interdisciplinary team in determining factors that may be contributing to abnormal

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						behaviors.
Outpatient (including Day rehab, Transitional living)			X			
LTAC/SNF		X				
Home Health			X			
Overall Comments:	The tool would be rated a 4 for in-patient rehabilitation if there were available guidance for score interpretation or responsiveness data available.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	It is important for students to understand the effect behaviors can have on patient outcomes.	
	X		X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X					
Additional information on this measure can be found at www.rehabmeasures.org : Agitated Behavior Scale						

References

- Bogner, J. A., Corrigan, J. D., Bode, R. K., & Heinemann, A. W. (2000). Rating scale analysis of the Agitated Behavior Scale. *J Head Trauma Rehabil, 15*(1), 656-669.
- Bogner, J. A., Corrigan, J. D., Fugate, L., Mysiw, W. J., & Clinchot, D. (2001). Role of agitation in prediction of outcomes after traumatic brain injury. *American journal of physical medicine & rehabilitation, 80*(9), 636.

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- Corrigan, J. D., & Bogner, J. A. (1994). Factor structure of the Agitated Behavior Scale. *J Clin Exp Neuropsychol, 16*(3), 386-392. doi: 10.1080/01688639408402649
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Instrument name: Apathy Evaluation Scale					
Reviewer: Karen McCulloch, PT, PhD, NCS				Date of review: 6/12/2012	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input checked="" type="checkbox"/> Other: Questions are non-specific "getting things done during the day"			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input checked="" type="checkbox"/> Other: Questions are non-specific "spends time doing things that interest them?"	
Link to rehabmeasures.org summary: Apathy Evaluation Scale					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab			X		
Outpatient (including Day rehab, Transitional living)		X			
LTAC/SNF			X		
Home Health			X		
Overall Comments:	Established diagnostic cut-point is most appropriately applied to an outpatient environment to address lack of activity that could relate to				

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	organic deficits or other causes of low initiative (depression, fatigue). Use of AES-Clinician or AES-Informant is better supported, given possible difficulty with insight into deficits that could affect the use of the AES-self form.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	This tool is better suited for specialty practice in TBI.	
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X					
Additional information on this measure can be found at www.rehabmeasures.org: Apathy Evaluation Scale						

References

- Andersson, S., & Bergedalen, A. M. (2002). Cognitive correlates of apathy in traumatic brain injury. *Neuropsychiatry Neuropsychol Behav Neurol*, 15(3), 184-191.
- Andersson, S., Gundersen, P. M., & Finset, A. (1999). Emotional activation during therapeutic interaction in traumatic brain injury: effect of apathy, self-awareness and implications for rehabilitation. *Brain Injury*, 13(6), 393-404.
- Andersson, S., Krogstad, J. M., & Finset, A. (1999). Apathy and depressed mood in acquired brain damage: relationship to lesion localization and psychophysiological reactivity. *Psychol Med*, 29(2), 447-456.

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- Glenn, M. (2005). The Apathy Evaluation Scale. *The Center for Outcome Measurement in Brain Injury*. <http://www.tbims.org/combi/aes> (accessed June 12, 2012).
- Kant, R., Duffy, J., & Pivovarnik, A. (1998). Prevalence of apathy following head injury. *Brain Injury*, 12(1), 87-92.
- Lane-Brown, A. T., & Tate, R. L. (2009). Measuring apathy after traumatic brain injury: Psychometric properties of the Apathy Evaluation Scale and the Frontal Systems Behavior Scale. *Brain Inj*, 23(13-14), 999-1007. doi: 10.3109/02699050903379347
- Marin, R. S., Biedrzycki, R. C., & Firinciogullari, S. (1991). Reliability and validity of the Apathy Evaluation Scale. *Psychiatry Res*, 38(2), 143-162.

Instrument name: Assessment of Life Habits (LIFE-H)					
Reviewer: Sue Saliga PT, DHSc, CEEAA				Date of review: 6/19/2012	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:		<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:		<input checked="" type="checkbox"/> Community function <input checked="" type="checkbox"/> Driving <input checked="" type="checkbox"/> Health and wellness <input checked="" type="checkbox"/> Home management <input checked="" type="checkbox"/> Leisure/Recreational activities <input checked="" type="checkbox"/> Life satisfaction <input checked="" type="checkbox"/> Quality of life <input checked="" type="checkbox"/> Reintegration to community <input checked="" type="checkbox"/> Role function <input checked="" type="checkbox"/> Shopping <input checked="" type="checkbox"/> Social function <input checked="" type="checkbox"/> Work <input checked="" type="checkbox"/> Other: Meal prep, eating, personal care, dressing, communication, financial and civic responsibilities, sexual relationships	
Link to rehabmeasures.org summary: Assessment of Life Habits (LIFE-H)					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab				X	
Outpatient (including Day rehab, Transitional living)			X		

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LTAC/SNF				X	More appropriate for community dwelling individuals	
Home Health			X			
Overall Comments:	<p>Very complete questionnaire for participation assessment. Manual available however fee is required. Administration is time consuming</p> <p>Strengths:</p> <ul style="list-style-type: none"> • Easy to administer; can be used as a self-administered questionnaire or in an interviewer-administered format. • Validated in adult and pediatric and general and specific rehabilitation populations. • A broad coverage of participation domains • Can be used to elicit performance and satisfaction ratings for participation domains • It has been used as an outcome measure in rehabilitation and epidemiologic research. <p>Limitations:</p> <ul style="list-style-type: none"> • Uses a long, laborious, and complicated response format, even in short form • Copyright issues and licensing fees • Several of the subscales have ceiling effects • The use of assistance or aids lowers accomplishment scores. <p>Use of LIFE-H as a self-report measure is not recommended for the elderly and people with cognitive impairments. When administered to clients with severe cognitive impairments the scores should be obtained from proxies.</p>					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	<p>Study by LaMontagne showed that 33% of activities described in LIFE-H require human assistance with individuals with TBI. Assistance was more frequent in areas of social roles than activities of daily living.</p>					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level	YES	NO	YES	NO		

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curricula?		X	X		
Research Use	YES		NO		Comments
Is this tool appropriate for use in intervention research studies?	X				Establishing reliability with TBI would strengthen use as a research tool
Additional information on this measure can be found at www.rehabmeasures.org : Assessment of Life Habits (LIFE-H)					

References

Desrosiers, J., Robichaud, L., et al. (2009). "Comparison and correlates of participation in older adults without disabilities." *Arch Gerontol Geriatr* 49(3): 397-403. [Find it on PubMed](#)

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Noreau L, Desrosiers J, Robichaud L, Fougeyrollas P, Rochette A, Viscogliosi C.(2004). Measuring social participation: reliability of the LIFE-H in older adults with disabilities. *Disabil Rehabil.* 26:346-52.

[Noreau L, Lepage C, Boissiere L, Picard R, Fougeyrollas P, Mathieu J, Desmarais G, Nadeau L. \(2007\). Measuring participation in children with disabilities using the Assessment of Life Habits. *Dev Med Child Neurol.* 49\(9\):666-71.](#)

Sakzewski, L., Ziviani, J., et al. (2011). "Participation outcomes in a randomized trial of 2 models of upper-limb rehabilitation for children with congenital hemiplegia." *Arch Phys Med Rehabil* 92(4): 531-539. [Find it on PubMed](#)

Instrument name: Awareness Questionnaire					
Reviewer: Karen McCulloch, PT, PhD, NCS				Date of review: 6/13/12	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input checked="" type="checkbox"/> Cognition <input checked="" type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input checked="" type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input checked="" type="checkbox"/> Other: vision, hearing, managing emotions, language		<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other: daily activities		<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other: social and life roles	
Link to rehabmeasures.org summary: Awareness Questionnaire					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab			X		
Outpatient (including Day rehab, Transitional living)			X		
LTAC/SNF				X	
Home Health			X		
Overall Comments:	In acute phase, patient and family may not realize deficits secondary to				

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	limited opportunities to function, nor is there time for this focus. During in- or out-patient rehabilitation, a clear understanding of the patient’s awareness is beneficial to clarify safety and discharge plans. A problem with awareness may be especially critical in the home health environment if consistent supervision is not available. These issues may not be as critical for SNF level care where patients are more dependent.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence			X			
II-Mild dependence			X			
III-Moderate dependence			X			
IV-Severe dependence				X		
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	May be useful to clarify impairment, activity and participation awareness for safety assessment with patients who have some level of independence – includes motor, cognitive and behavioral items.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Not necessary for entry-level education, rather more specialized practice.	
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				May be helpful to characterize awareness deficits if a caregiver is available as informant.	
Additional information on this measure can be found at www.rehabmeasures.org: Awareness Questionnaire						

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and employment outcome after traumatic brain injury. *Journal of Head Trauma Rehabilitation*, 13, 52-61. **More information is available from PubMed at this link, PMID: [9753535](#)**

Sherer, M., Boake, C., Levin, E., Silver, B.V., Ringholz, G., & High, Jr., W. (1998c). Characteristics of impaired awareness after traumatic brain injury. *Journal of the International Neuropsychological Society*, 4, 380-387. **More information is available from PubMed at this link, PMID: [9656611](#)**

Instrument name: Balance Error Scoring System (BESS)					
Reviewer: Katie Hays, PT, DPT				Date of review: 5/26/12	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:	<input checked="" type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Balance Error Scoring System					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED			X		
In-Patient Rehab			X		
Outpatient (including Day rehab, Transitional living)		X			Tested in athletes (Bell et al, 2011), concussion (Barlow et al, 2011)
LTAC/SNF				X	May be too difficult for this population, intended for use with mild injuries.
Home Health			X		

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Overall Comments:	Variable reliability of test, but multiple studies completed with concussion and mild brain injury (Bell et al, 2011, Finnoff et al, 2009)					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence		X				
II-Mild dependence			X			
III-Moderate dependence				X		
IV-Severe dependence				X		
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	High level test, only appropriate for use in a physically high-level population.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Used mostly in the return-to-sports, post-concussion population.	
		X	X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?			X		Not studied extensively with brain injury at this time (except in concussion), variable reliability and psychometric data (Bell et al, 2011, Barlow et al, 2011)	
Additional information on this measure can be found at www.rehabmeasures.org : Balance Error Scoring System						

References

Barlow, M., Schlabach, D. et al. (2011). "Differences in change scores and the predictive validity of three commonly used measures following concussion in the middle school and high school aged population." Int J of Sports Phys Ther. 6(3):150-157.

Bell, D.R., Guskiewicz, K.M., et al. (2011). "Systematic review of the balance error scoring system." Sports Health: A Multidisciplinary Approach 3:287-295.

Finnoff, J.T., Peterson, V.J., et al. (2009). "Intrarater and interrater reliability of the balance error scoring system (BESS)." *Phys Med and Rehabil.* 1(1):50-54.

Instrument name: Balance Evaluation Systems Test (BESTest)					
Reviewer: Katie Hays, PT, DPT				Date of review: 5/21/12	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity _____ Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
___ Aerobic capacity/endurance ___ Ataxia ___ Cardiovascular/pulmonary status ___ Cognition ___ Coordination (non-equilibrium) ___ Dizziness ___ Dual Tasks ___ Fatigue <input checked="" type="checkbox"/> Flexibility <input checked="" type="checkbox"/> Muscle performance ___ Muscle tone / spasticity ___ Pain <input checked="" type="checkbox"/> Sensory integration ___ Somatosensation <input checked="" type="checkbox"/> Other: Posture	<input checked="" type="checkbox"/> Balance/falls ___ Bed mobility <input checked="" type="checkbox"/> Gait (include stairs) ___ High Level mobility <input checked="" type="checkbox"/> Transfers ___ Wheelchair skills ___ Other:			___ Community function ___ Driving ___ Health and wellness ___ Home management ___ Leisure/Recreational activities ___ Life satisfaction ___ Quality of life ___ Reintegration to community ___ Role function ___ Shopping ___ Social function ___ Work ___ Other:	
Link to rehabmeasures.org summary: Balance Evaluations Systems Test (BESTest)					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	May be too time consuming/too many equipment needs in this setting
In-Patient Rehab			X		
Outpatient (including Day rehab, Transitional living)			X		
LTAC/SNF			X		

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Home Health				X	May be too many specific equipment needs in this setting.	
Overall Comments:						
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence			X			
II-Mild dependence			X			
III-Moderate dependence			X			
IV-Severe dependence				X		All test items require standing
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	Lack of psychometric data for most populations, specifically for TBI population at this time. However, the psychometric data supporting this measure is promising, and may be useful as studies are completed (Leddy, 2011, Horack, 2009). Individual must be able to follow 2-3 step commands. There is also a recently developed mini BEST that may have more clinical utility.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Lack of psychometric data and widespread use at this time.	
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?			X		Lack of psychometric data in the TBI population.	
Additional information on this measure can be found at www.rehabmeasures.org: Balance Evaluations Systems Test (BESTest)						

References

Horak, F.B., Wrisley, D.M., et al. (2009). "The Balance Evaluation Systems Test (BESTest) to differentiate balance deficits." *PhysTher.* 89(5):484-498.

Leddy, A.L., Crowner, B.E., et al (2011). "Functional Gait Assessment and Balance Evaluation Systems Test: reliability, validity, sensitivity, and specificity for indentifying individuals with Parkinson Disease who fall." *Phys Ther.* 91(1):102-113.

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Leddy, A.L., Crowner, B.E., et al (2011). "Utility of the Mini-BESTest, BESTest, and BESTest sections for balance assessments in individuals with Parkinson Disease." *J Neurol Phys Ther.* 35:90-97.

Instrument name: Barthel Index					
Reviewer: Tammie Keller Johnson PT, DPT, MS			Date of Review: 4/29/12		
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/structure <input checked="" type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:		<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input checked="" type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input checked="" type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input checked="" type="checkbox"/> Other: <ul style="list-style-type: none"> • Feeding • Bathing • Grooming • Dressing • Bowel control • Bladder control • Toileting • Chair transfer • Ambulation • Stair climbing 		<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Barthel Index					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED			X		
In-Patient Rehab		X			
Outpatient (including Day rehab, Transitional living)			X		

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LTAC/SNF			X			
Home Health			X			
Overall Comments:	<p>It has a restricted focus, insensitivity in detecting change and low ceiling effect limit its usefulness in rehabilitation practice (Applegate, et al., 1990; Granger et al., 1990)</p> <p>The studies using the Barthel Index have largely been on patients with stroke. A few studies included individuals with brain injury (traumatic) as part of their neurologically impaired cohort of subjects.</p>					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence				X		Low ceiling on this measure for high functioning individuals (i.e. those who score 100, the highest possible score). Will not show change once patient is independent.
II-Mild dependence			X			
III-Moderate dependence			X			
IV-Severe dependence			X			
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	<p>This measure may be administered either by survey or by observation . Scoring on the BI spans from complete dependence to independence in mobility and skills. Psychometric studies have been done largely on the stroke population.</p>					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO		
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				A tool easy to administer and widely used in medical research studies in stroke. Has been used in several stroke unit studies. This measure has demonstrated good responsiveness	

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			and adequate floor and ceiling effects in more acutely involved individuals. May be less effective in a chronic or highly mobile patient population.
<p>Additional information on this measure can be found at www.rehabmeasures.org: Barthel Index The form is located at: http://www.strokecenter.org/wp-content/uploads/2011/08/barthel.pdf</p>			

References

Granger CV, Cotter AC, Hamilton BB, Fiedler RC, Hens MM. Functional assessment scales: a study of persons with multiple sclerosis. Arch Phys Med Rehabil. 1990 Oct;71(11):870-5. PMID: 2222154 [PubMed - indexed for MEDLINE]

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Instrument name: Berg Balance Scale (BBS)					
Reviewer: Katie Hays, PT, DPT				Date of review: 5/12/12	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:		<input checked="" type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:		<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Berg Balance Scale (BBS)					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED			X		May not be applicable in the ER
In-Patient Rehab		X			Tested in iSCI, stroke, TBI (Lemay and Nadeau, 2010; Stevensen, 2001; Newstead, 2005)
Outpatient (including Day rehab, Transitional living)		X			Tested in PD, elderly, iSCI, stroke (Steffen and Seney, 2008; Berg 1992; Ditunno, 2007; Liston and Brouwer, 1996)

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LTAC/SNF			X		Tested in elderly (Donoghue, 2009)	
Home Health			X		Tested in elderly	
Overall Comments:						
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence			X			Has a ceiling effect if individual is too high functioning. (Salbach , 2001; Lemay and Nadeau, 2010)
II-Mild dependence			X			
III-Moderate dependence			X			
IV-Severe dependence				X		Floor effect if too low functioning (Mao, 2002; Chou, 2006).
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	Must be able to follow basic commands, and attend to tasks up to at minimum 1 minute intervals. Demonstrates ceiling and floor effects.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Used in multiple patient populations	
	X		X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X					
Additional information on this measure can be found at www.rehabmeasures.org : Berg Balance Scale (BBS)						

References

Berg, K., Wood-Dauphinee, S., et al. (1995). "The Balance Scale: reliability assessment with elderly residents and patients with an acute stroke." Scand J Rehabil Med 27(1): 27-36. [Find it on PubMed](#)

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Salbach, N., Mayo, N., et al. (2001). "Responsiveness and predictability of gait speed and other disability measures in acute stroke." *Archives of physical medicine and rehabilitation* 82(9): 1204-1212. [Find it on PubMed](#)

Steffen, T. and Seney, M. (2008). "Test-retest reliability and minimal detectable change on balance and ambulation tests, the 36-Item Short-Form Health Survey, and the Unified Parkinson Disease Rating Scale in people with parkinsonism." *Physical Therapy* 88(6): 733. [Find it on PubMed](#)

Stevenson, T. J. (2001). "Detecting change in patients with stroke using the Berg Balance Scale." *Aust J Physiother* 47(1): 29-38. [Find it on PubMed](#)

Instrument name: Brunel Balance Assessment (BBA)					
Reviewer: Katie Hays, PT, DPT				Date of review: 5/19/12	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:		<input checked="" type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:		<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Brunel Balance Assessment					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED			X		
In-Patient Rehab			X		
Outpatient (including Day rehab, Transitional living)			X		
LTAC/SNF			X		
Home Health			X		
Overall Comments:	Limited psychometric data, only available for stroke population (Tyson and				

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	DeSouza, 2004, Tyson 2007, Tyson and Connell, 2009). However, test is feasible to perform in any setting.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence				X		May have ceiling effects for someone who is physically independent.
II-Mild dependence			X			
III-Moderate dependence			X			
IV-Severe dependence			X			May have floor effect for someone who is physically dependent, however not shown in the limited evidence
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	Limited data available, only tested in stroke population by one group (Tyson and DeSouza, 2004, Tyson 2007, Tyson and Connell, 2009)					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Measure is only tested in stroke population at this time and not commonly used in the literature	
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?			X		Not at this time, due to limited psychometric data and no testing in TBI population.	
Additional information on this measure can be found at www.rehabmeasures.org : Brunel Balance Assessment						

References

Tyson, S.F. and Connell, L.A. (2009). "How to measure balance in clinical practice. A systematic review of the psychometrics and clinical utility of measures of balance activity for neurological conditions." Clin Rehabil. 23:824-840

Tyson, S.F. and DeSouza, L.H. (2004). "Development of the Brunel Balance Assessment: a new measure of balance disability post stroke." Clin Rehabil. 18:801-810

Tyson, S.F., Hanley, M., et al (2007). "The relationship between balance, disability, and recovery after stroke: predictive validity of the Brunel Balance Assessment." *Neurorehabil Neural Repair*. 21(4):341-346

Instrument name: Canadian Occupational Performance Measure (COPM)					
Reviewer: Anna de Joya, PT, MS, NCS				Date of review: 07.23.2012	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input checked="" type="checkbox"/> Home management <input checked="" type="checkbox"/> Leisure/Recreational activities <input checked="" type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input checked="" type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input checked="" type="checkbox"/> Other: Self-report of performance and satisfaction	
Link to rehabmeasures.org summary: Canadian Occupational Performance Measure					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab				X	
Outpatient (including Day rehab, Transitional living)			X		
LTAC/SNF				X	
Home Health			X		
Overall Comments:	<ul style="list-style-type: none"> Psychometric properties limited in the TBI population 				

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	<ul style="list-style-type: none"> • Lengthy to administer but patient-centered • It has proprietary considerations • No special training required to administer the test. • It has been used with proxy respondents. 					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO		
		X	X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				It has adequate psychometric properties that can be applied to the TBI population to be used in conjunction with other measures.	
Additional information on this measure can be found at www.rehabmeasures.org/ : Canadian Occupational Performance Measure						

References

Bodiam C. The use of the Canadian Occupational Performance Measure for the assessment of outcome on a neurorehabilitation unit. *British Journal of Occupational Therapy* 1999;62:123–126.

Chen, Y. H., Rodger, S., et al. (2002). "Experiences with the COPM and client-centred practice in adult neurorehabilitation in Taiwan." *Occup Ther Int* 9(3): 167-184. [Find it on PubMed](#)

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Eyssen IC, Steultjens MP, Oud TA, Bolt EM, Maasdam A, Dekker J. (2011). Responsiveness of the Canadian occupational performance measure. *J Rehabil Res Dev.* 48(5):517-28.

Jenkinson N, Ownsworth T, Shum D. (2007). Utility of the Canadian Occupational Performance Measure in community-based brain injury rehabilitation. *Brain Inj.* 21(12):1283-94.

Phipps S, Richardson P. (2007). Occupational therapy outcomes for clients with traumatic brain injury and stroke using the Canadian Occupational Performance Measure. *Am J Occup Ther.* 61(3):328-34.

Trombly CA, Radomski MV, Davis EA. (1998). Achievement of self identified goals by adults with traumatic brain injury: Phase I. *The American Journal of Occupational Therapy* 52:810–818.

Trombly CA, Radomski MV, Trexel C, Burnet-Smith SE. (2002) Occupational therapy and achievement of self-identified goals by adults with acquired brain injury: phase II. *Am J Occup Ther.* 56(5):489-98.

Wressle E, Eeg-Olofsson AM, Marcusson J, Henriksson C. (2002). Improved client participation in the rehabilitation process using a client-centred goal formulation structure. *J Rehabil Med.* 34(1):5-11.

Instrument name: Clinical Test of Sensory Interaction and Balance (CTSIB)					
Reviewer: Katie Hays, PT, DPT				Date of review: 5/28/12	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity _____ Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
_____ Aerobic capacity/endurance _____ Ataxia _____ Cardiovascular/pulmonary status _____ Cognition _____ Coordination (non-equilibrium) _____ Dizziness _____ Dual Tasks _____ Fatigue _____ Flexibility _____ Muscle performance _____ Muscle tone / spasticity _____ Pain <input checked="" type="checkbox"/> Sensory integration _____ Somatosensation _____ Other:		<input checked="" type="checkbox"/> Balance/falls _____ Bed mobility _____ Gait (include stairs) _____ High Level mobility _____ Transfers _____ Wheelchair skills _____ Other:		_____ Community function _____ Driving _____ Health and wellness _____ Home management _____ Leisure/Recreational activities _____ Life satisfaction _____ Quality of life _____ Reintegration to community _____ Role function _____ Shopping _____ Social function _____ Work _____ Other:	
Link to rehabmeasures.org summary: Clinical Test of Sensory Interaction and Balance					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED			X		May not be appropriate in this setting
In-Patient Rehab			X		
Outpatient (including Day rehab, Transitional living)			X		
LTAC/SNF			X		
Home Health			X		Not tested specifically in home health, but easy to administer with

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						this population.
Overall Comments:	No studies in the adult TBI population. Not designed to evaluate change over time (Bernhardt, 1998)					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence			X			
II-Mild dependence			X			
III-Moderate dependence			X			
IV-Severe dependence				X		
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	Requires individual be able to stand and follow 1-2 step commands.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Used in other populations. No psychometrics for adult TBI. Also modified CTSIB, shorter and does not require use of visual conflict dome (Boulgarides, 2003).	
	X		X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?			X		No psychometrics for adult TBI, designed to evaluate relative contributions of balance, not to evaluate change over time (Bernhardt, 1998).	
Additional information on this measure can be found at www.rehabmeasures.org: Clinical Test of Sensory Interaction and Balance						

References

Bernhardt, J., Ellis, P., et al. (1998). "Changes in balance and locomotion measures during rehabilitation following stroke." *Physiother Res Int* 3(2): 109-122. [Find it on PubMed](#)

Boulgarides, L.K., McGinty, S.M., et al (2003). "Use of clinical and impairment-based tests to predict falls by community-swelling older adults." *Phys Ther* 83(4):328-339.

Instrument name: Cognitive Log (Cog-Log)					
Reviewer: Karen McCulloch, PT, PhD, NCS				Date of review: 6/12/12	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input checked="" type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input checked="" type="checkbox"/> Other: orientation, memory, praxis, executive function	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Cognitive Log					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab		X			
Outpatient (including Day rehab, Transitional living)				X	
LTAC/SNF				X	

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Home Health					X	
Overall Comments:	Has been used as a measure during bedside rounds during in-patient rehabilitation 3/week to monitor early cognitive changes in orientation and basic cognitive functions.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	Designed for use as a bedside measure of general cognitive function that doesn't require writing. May be useful to track cognitive status.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO		
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X					
Additional information on this measure can be found at www.rehabmeasures.org : Cognitive Log						

References

Alderson AL, Novack TA, Dowler, R. (2003). Reliable serial measurement of cognitive processes in rehabilitation: the Cognitive-Log. *Arch Phys Med Rehabil*, 84: 668-672. **More information is available from PubMed at this link, PMID: [12736879](https://pubmed.ncbi.nlm.nih.gov/12736879/)**

Lee, D, LoGalbo, AP, Baños, JH, Novack, TA. (2004). Prediction of cognitive abilities one year following TBI based on cognitive screening during rehabilitation. *Rehabil Psychol*, 49: 167-171

Penna S, Novack TA. Further validation of the Orientation and Cognitive Logs: their relationship to the Mini Mental State Examination. *Arch Phys Med Rehabil* 2007; 88:1360-1.

Instrument name: Coma Recovery Scale-Revised					
Reviewer: Erin Donnelly, PT, MS, NCS			Date of review: 6/1/12		
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input checked="" type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input checked="" type="checkbox"/> Somatosensation <input checked="" type="checkbox"/> Other: Responsiveness to stimuli on 6 subscales: Auditory, Visual, Motor, Oromotor, Communication and Arousal	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Coma Recovery Scale-Revised					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED		X			Patients with DOC who are on acute for extended care could be examined with the CRS-R, but testing time is 25 minutes or greater.
In-Patient Rehab	X				Patients with disorders of consciousness, no matter what setting they are seen in should be evaluated using a sensitive scale, the CRS-R is the
Outpatient (including Day rehab, Transitional living)	X				

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LTAC/SNF	X				current standard available.	
Home Health	X					
Overall Comments:	The scale is designed for use with patients at Rancho Levels I-IV and differentiates between vegetative state, minimally conscious state and emergence from minimally conscious state (MCS+). Other scales do not offer this utility in such clarity.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Students should learn about the CRS-R and understand differences in VS, MCS and emergence from MCS.	
	X		X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				The CRS-R demonstrates good –excellent psychometrics for TBI is highly recommended for research with this population.	
Additional information on this measure can be found at www.rehabmeasures.org : Coma Recovery Scale-Revised						

References

Giacino J, Kalmar K, Whyte J (2004). “The JFK Coma Recovery Scale-Revised: Measurement Characteristics and Diagnostic Utility”. Arch Phys Med Rehabilitation 85: 2020-2029.

Schnakers C, Majerus S, Giacino J, Vanhaudenhuyse A, Bruno MA, Boly M, Moonen G, Damas P, Lambermont B, Lamy M, Damas F, Ventura M, Laureys S. A French validation study of the Coma

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Recovery Scale-Revised (CRS-R). *Brain Inj.* 2008 Sep;22(10):786-92. PubMed PMID: 18787989
Schnakers C, Vanhauwenhuyse A, Giacino J, Ventura M, Boly M, Majerus S, Moonen G, Laureys S.
Diagnostic accuracy of the vegetative and minimally conscious state: clinical consensus versus
standardized neurobehavioral assessment. *BMC Neurol.* 2009 Jul 21;9:35. PubMed PMID: 19622138;
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Løvstad M, Frøslie KF, Giacino JT, Skandsen T, Anke A, Schanke AK. Reliability and diagnostic
characteristics of the JFK coma recovery scale-revised: exploring the influence of rater's level of
experience. *J Head Trauma Rehabil.* 2010 Sep-Oct;25(5):349-56. PubMed PMID: 20142758.

Godbolt AK, Stenson S, Winberg M, Tengvar C. Disorders of consciousness: preliminary data supports
added value of extended behavioural assessment. *Brain Inj.* 2012;26(2):188-93. PubMed PMID:
22360525.

Instrument name: Community Balance and Mobility Scale (CB&M)					
Reviewer: Tammie Keller Johnson PT, DPT, MS				Date of review: 6/10/12	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity _____ Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
___ Aerobic capacity/endurance ___ Ataxia ___ Cardiovascular/pulmonary status ___ Cognition ___ Coordination (non-equilibrium) ___ Dizziness <input checked="" type="checkbox"/> Dual Tasks ___ Fatigue ___ Flexibility ___ Muscle performance ___ Muscle tone / spasticity ___ Pain ___ Sensory integration ___ Somatosensation ___ Other:	<input checked="" type="checkbox"/> Balance/falls ___ Bed mobility <input checked="" type="checkbox"/> Gait (include stairs) <input checked="" type="checkbox"/> High Level mobility* ___ Transfers ___ Wheelchair skills *Tandem walk, unilateral stance, hopping, lateral foot scooting, tandem pivot, step-ups, stairs, walk look and carry, fwd/bkwd walking, running and stopping, walking and looking, lateral dodging, crouch and walk. ___ Other:			___ Community function ___ Driving ___ Health and wellness ___ Home management ___ Leisure/Recreational activities ___ Life satisfaction ___ Quality of life ___ Reintegration to community ___ Role function ___ Shopping ___ Social function ___ Work ___ Other:	
Link to rehabmeasures.org summary: Community Balance and Mobility Scale					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED		X			
In-Patient Rehab		X			Cannot use an assistive device for the test with exception of item #12 note; These patients would not likely be admitted to an inpatient rehab.
Outpatient (including Day rehab, Transitional living)		X			
LTAC/SNF		X			See In-Patient Rehab, above.

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						Designed for clients that have reached the ceiling effect for the Berg Balance Scale. Inness 2011.
Home Health		X				
Overall Comments:	Populations tested: TBI, Cerebral Palsy, Stroke, Geriatric					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence		X				
II-Mild dependence		X				Can only use an assistive device for the test on item #12.
III-Moderate dependence				X		
IV-Severe dependence				X		Designed for clients that have reached the ceiling effect for the Berg Balance Scale. Inness et al., 2011
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	CB&M scale was designed for ambulatory individuals with TBI.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO		
	X		X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X					
Additional information on this measure can be found at www.rehabmeasures.org : Community Balance and Mobility Scale The Toronto Rehab's website: http://www.torontorehab.com/TorontoRehabCorporate/media/Toronto-Rehab-Corporate/CBM-Aug2002BLUEREVISED_1.pdf Also at: http://www.tbims.org/combi/cbm/index.htm						

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Virginia Wright, F., Ryan, J., & Brewer, K. (2010). Reliability of the Community Balance and Mobility Scale (CB&M) in high-functioning school-aged children and adolescents who have an acquired brain injury. *Brain Injury*(0), 1-10.

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Instrument name: Community Integration Measure (CIM)					
Reviewer: Anna de Joya, PT, MS, NCS				Date of review: 08.25.2012	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input checked="" type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input checked="" type="checkbox"/> Other: perceived connections with the community in 4 areas: general assimilation, support, occupation and independent living	
Link to rehabmeasures.org summary: Community Integration Measure					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab				X	
Outpatient (including Day rehab, Transitional living)			X		
LTAC/SNF				X	

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Home Health			X			
Overall Comments:	<p>It is a short and simple measure to use in the clinic.</p> <p>Statistically significant correlations have been demonstrated, but the correlations are weak. However, the intent of the measure is to assess perceived integration into the community, and so low correlations with other traditional participation measures could be expected.</p> <p>While there are limited studies in the TBI population, there is good psychometric data to support a rating of 2 in the outpatient and home health settings.</p>					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Inadequate studies and data to make a recommendation at this time.	
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?			X		Inadequate data to make a recommendation at this time. Further research needed.	
Additional information on this measure can be found at www.rehabmeasures.org : Community Integration Measure						

References

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Griffen JA, Hanks RA, Meachen SJ. (2010). The reliability and validity of the Community Integration Measure in persons with traumatic brain injury. *Rehabil Psychol.* 55(3):292-7.

McColl MA, Davies D, Carlson P, Johnston J, Minnes P. (2001). The community integration measure: development and preliminary validation. *Arch Phys Med Rehabil.* 82(4):429-34.

Minnes P, Carlson P, McColl MA, Nolte ML, Johnston J, Buell K. (2003). Community integration: a useful construct, but what does it really mean? *Brain Inj.* 17(2):149-59.

Reistetter TA, Spencer JC, Trujillo L, Abreu BC. (2005). Examining the Community Integration Measure (CIM): a replication study with life satisfaction. *NeuroRehabilitation.* 20(2):139-48.

Instrument name: Community Integration Questionnaire (CIQ)					
Reviewer: Anna de Joya, PT, MS, NCS				Date of review: 07.04.2012	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input checked="" type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Community Integration Questionnaire (CIQ)					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab				X	
Outpatient (including Day rehab, Transitional living)		X			
LTAC/SNF				X	
Home Health		X			
Overall Comments:	<ul style="list-style-type: none"> This measure is widely used in the TBI population as it was developed and validated specifically for individuals with TBI 				

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	<ul style="list-style-type: none"> • It is short and simple/easy to administer and score, and no proprietary considerations. • No special training required to administer the test. • It has been used with proxy respondents. • Items are more related to roles and participation upon discharge from the acute care and in-patient rehab or SNF settings. • Does not measure integration skills. 					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	It is widely used in TBI research and has been validated in the TBI population. Developed to assess handicap under the ICIDH and does not assess all the domains of participation under the ICF.	
	X		X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				It has adequate psychometric properties validated specifically for individuals with TBI; take into consideration that it was developed under the ICIDH and does not assess all the domains under the participation domain of the ICF framework.	
Additional information on this measure can be found at www.rehabmeasures.org: Community						

[Integration Questionnaire \(CIQ\)](#)**References**

Burleigh SA, Farber RS, Gillard M. (1998). Community integration and life satisfaction after traumatic brain injury: long-term findings. *Am J Occup Ther.* 52(1):45-52.

Cusick CP, Gerhart KA, Mellick DC. (2000). Participant-proxy reliability in traumatic brain injury outcome research. *J Head Trauma Rehabil.* 15(1):739-49.

Gurka JA, Felmingham KL, Baguley IJ, Schotte DE, Crooks J, Marosszeky JE. (1999). Utility of the functional assessment measure after discharge from inpatient rehabilitation. *J Head Trauma Rehabil.* 14(3):247-56.

Hall KM, Bushnik T, Lakusic-Kazazic B, Wright J, Cantagallo A. (2001). Assessing traumatic brain injury outcome measures for long-term follow-up of community-based individuals. *Arch Phys Med Rehabil.* 82(3):367-74.

Heinemann AW, Whiteneck GG. (1995). Relationships among impairment, disability, handicap and life satisfaction in persons with traumatic brain injury. *Journal of Head Trauma Rehabilitation.* 10:54–63.

Kaplan, C. P. (2001). "The community integration questionnaire with new scoring guidelines: concurrent validity and need for appropriate norms." *Brain Inj* 15(8): 725-731. [Find it on PubMed](#)

Kuipers P, Kendall M, Fleming J, Tate R. (2004). Comparison of the Sydney Psychosocial Reintegration Scale (SPRS) with the Community Integration Questionnaire (CIQ): psychometric properties. *Brain Inj.* 18(2):161-77.

Sander, A. M., Fuchs, K. L., et al. (1999). "The Community Integration Questionnaire revisited: an assessment of factor structure and validity." *Arch Phys Med Rehabil* 80(10): 1303-1308. [Find it on PubMed](#)

Seale GS, Caroselli JS, High WM Jr, Becker CL, Neese LE, Scheibel R. (2002). Use of community integration questionnaire (CIQ) to characterize changes in functioning for individuals with traumatic brain injury who participated in a post-acute rehabilitation programme. *Brain Inj.* 16(11):955-67.

Willer, B., Rosenthal, M., et al. (1993). "Assessment of community integration following rehabilitation for traumatic brain injury." *The Journal of head trauma rehabilitation* 8(2): 75.

Zhang, L., Abreu, B., et al. (2002). "Comparison of the community integration questionnaire, the Craig handicap assessment and reporting technique, and the disability rating scale in traumatic brain injury." *The Journal of head trauma rehabilitation* 17(6): 497. [Find it on PubMed](#)

Instrument name: Community Integration Questionnaire II					
Reviewer: Anna de Joya, PT, MS, NCS				Date of review: 07.04.2012	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input checked="" type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Community Integration Questionnaire II					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab				X	
Outpatient (including Day rehab, Transitional living)				X	
LTAC/SNF				X	
Home Health				X	
Overall Comments:	Inadequate data available at this time to make a recommendation.				

Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Inadequate studies and data to make a recommendation at this time.	
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?			X		Inadequate data to make a recommendation at this time. Further research needed.	
Additional information on this measure can be found at www.rehabmeasures.org: Community Integration Questionnaire II						

References

Johnston, M. V., Goverover, Y., et al. (2005). "Community activities and individuals' satisfaction with them: quality of life in the first year after traumatic brain injury." Archives of physical medicine and rehabilitation 86(4): 735-745. [Find it on PubMed](#)

Whiteneck, G. G., Dijkers, M. P., et al. (2011). "Development of the Participation Assessment With Recombined Tools-Objective for Use After Traumatic Brain Injury." Arch Phys Med Rehabil. [Find it on PubMed](#)

Instrument name: Craig Handicap Assessment and Reporting Technique (CHART)					
Reviewer: Sue Saliga, PT, DHSc, CEEAA				Date of review: 9/8/2012	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:		<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:		<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input checked="" type="checkbox"/> Other: Physical independence, cognitive independency, mobility, social integration, occupation and economic self-sufficiency	
Link to rehabmeasures.org summary: Craig Handicap Assessment and Reporting Technique					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab				X	
Outpatient (including Day rehab, Transitional living)			X		
LTAC/SNF				X	
Home Health			X		

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Overall Comments:	<ul style="list-style-type: none"> • Easy to administer • Calculation necessary to finalize score, but scoring is not difficult • Can be completed by proxy • Longer to administer than CHART-SF, but more precise for smaller groups • No proprietary issues 					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
	YES	NO	YES	NO		
Should this tool be required for entry level curricula?		X	X		More research with population with TBI is necessary. Insufficient data in TBI population to recommend required learning in entry-level curriculum, however, suggest exposure to tool as a participation measure given that the CHART has been adopted by the TBI models Systems as a follow up measure in the community.	
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				The CHART has been adopted by the TBI models Systems as a follow up measure in the community.	
Additional information on this measure can be found at www.rehabmeasures.org : Craig Handicap Assessment and Reporting Technique						

References

Corrigan JD, Smith-Knapp K, Granger CV. (1998). Outcomes in the first 5 years after traumatic brain injury. *Arch Phys Med Rehabil* 1998;79:298-305.

Craig Handicap Assessment Reporting Technique. Weblink:
<http://www.craighospital.org/Research/Instruments/Disability-Research-Instruments-CHART>. Accessed on September 16, 2012.

Cusick, C.P., Brooks, C.A., Whiteneck, G.G. (2001). Use of proxies in community integration research. *Arch Phys Med Rehabil.*, 82, 1018-24

Dikmen S, French L, Giacino JT, Hart T, Malec JF, Millis SR, Novack TA, Sherer M, Tulskey DS, Vanderploeg RD, von Steinbuechel N. (2010). Recommendations for the use of common outcome measures in traumatic brain injury research. *Arch Phys Med Rehabil.* 91:1650-60.

Hall, K. M., Bushnik, T., et al. (2001). "Assessing traumatic brain injury outcome measures for long-term follow-up of community-based individuals." *Arch Phys Med Rehabil* 82(3): 367-374. [Find it on PubMed](#)

Mellick, D. (2000). The Craig Handicap Assessment and Reporting Technique - Short Form. The Center for Outcome Measurement in Brain Injury. <http://www.tbims.org/combi/chartsf> (accessed September 9, 2012).

Walker N, M. D., Brooks CA, Whiteneck GG. (2003). "Measuring participation across impairment groups using the Craig Handicap Assessment Reporting Technique." *American Journal of Physical Medicine and Rehabilitation* 82(12): 936-941. [Find it on PubMed](#)Wilde EA, Whiteneck GG, Bogner J, Bushnik T, Cifu DX.

Instrument name: Craig Handicap Assessment and Reporting Technique-Short Form (CHART-SF)					
Reviewer: Sue Saliga, PT, DHSc, CEEAA				Date of review: 9/8/2012	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input checked="" type="checkbox"/> Other: Physical independence, cognitive independency, mobility, social integration, occupation and economic self-sufficiency	
Link to rehabmeasures.org summary: Craig Handicap Assessment and Reporting Technique-Short Form					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab				X	
Outpatient (including Day rehab, Transitional living)			X		
LTAC/SNF				X	

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Home Health			X			
Overall Comments:	<ul style="list-style-type: none"> • Easy to administer • Takes less time to administer than Original CHART • Calculation necessary to finalize score, however, scoring is not difficult • Can be completed by proxy • No proprietary issues 					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	More research with population with TBI is necessary. The CHART –SF has been recommended by the Common Data Elements TBI Workgroup as a core measure in 2011 and will potentially see increased use of this measure in the literature. Insufficient data in TBI population to recommend required learning in entry-level curriculum, however, suggest exposure to tool as a participation measure given that it has been adopted by the TBI models Systems	
		X	X			

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Research Use	YES	NO	Comments
Is this tool appropriate for use in intervention research studies?	X		as a follow up measure in the community. While further studies recommended on the reliability and validity of the CHART-SF in the TBI population, its utility in research has potential. Per Common Data Elements TBI Workgroup, the CHART-SF is a recommended core measure. Insufficient data in TBI population, however, it is one of the participation measures that has been adopted by the TBI models Systems as a follow up measure in the community.
Additional information on this measure can be found at www.rehabmeasures.org: Craig Handicap Assessment and Reporting Technique-Short Form			

References

Craig Handicap Assessment Reporting Technique.

<http://www.craighospital.org/Research/Instruments/Disability-Research-Instruments-CHART>. Accessed on September 16, 2012.

Mellick, D. (2000). The Craig Handicap Assessment and Reporting Technique - Short Form. The Center for Outcome Measurement in Brain Injury. <http://www.tbims.org/combi/chartsf> (accessed September 9, 2012).

Wilde EA, Whiteneck GG, Bogner J, Bushnik T, Cifu DX, Dikmen S, French L, Giacino JT, Hart T, Malec JF, Millis SR, Novack TA, Sherer M, Tulsy DS, Vanderploeg RD, von Steinbuechel N. (2010).

Recommendations for the use of common outcome measures in traumatic brain injury research. Arch Phys Med Rehabil. 91:1650-60

Instrument name: Craig Hospital Inventory of Environmental Factors (CHIEF) long form and short form					
Reviewer: Sue Saliga PT, DHSc, CEEAA				Date of review: 6/19/2012	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation , Environment					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:		<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:		<input checked="" type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input checked="" type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input checked="" type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input checked="" type="checkbox"/> Social function <input checked="" type="checkbox"/> Work <input checked="" type="checkbox"/> Other: Transportation, attitudes and support; services and assistance; physical and structural environment/accessibility; policy; resource availability, education	
Link to rehabmeasures.org summary: Craig Hospital Inventory of Environmental Factors-Long and Short Form					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	Person needs to have been in community to answer inventory

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In-Patient Rehab					X	
Outpatient (including Day rehab, Transitional living)			X			
LTAC/SNF					X	
Home Health			X			
Overall Comments:	<ul style="list-style-type: none"> • Time to administer CHIEF long form may be too lengthy to administer; CHIEF-SF may be more appropriate; however, independent evaluation of the CHIEF-SF psychometric properties recommended • No proprietary considerations • Items are more related to environmental barriers that are related to conditions in the community or upon discharge from the acute care and in-patient rehab or SNF settings • Scoring is not complicated • May not be appropriate for use with individuals with severe cognitive limitations; requires memory of activity and perceptions within past 12 months • Reasonable to use, however, limited psychometric data in the TBI population 					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Insufficient data in TBI population to recommend required learning in entry-level curriculum, however, suggest exposure to the CHIEF-SF as a participation measure given that it has been	
		X	X			

				adopted by the TBI models Systems and funded by the US Department of Education and the National Institute on Disability and Rehabilitation Research (NIDDR) as a follow up measure in the community.
Research Use	YES	NO	Comments	
Is this tool appropriate for use in intervention research studies?	X		While there is insufficient data in the TBI population at this time, the CHIEF can be a starting point for a comprehensive evaluation of the extent of environmental barriers encountered by individuals with TBI. The Traumatic Brain Injury Model Systems funded by the US Department of Education, NIDDR has adopted the CHIEF-SF as a follow-up measure in the community.	
Additional information on this measure can be found at www.rehabmeasures.org : Craig Hospital Inventory of Environmental Factors-Long and Short Form				

References

Craig Hospital Inventory of Environmental Factors. Weblink: <http://www.craighospital.org/Research/Instruments/Disability-Research-Instruments-CHIEF>. Accessed on September 16, 2012.

Harrison-Felix, C. (2001). The Craig Hospital Inventory of Environmental Factors. *The Center for Outcome Measurement in Brain Injury*. <http://www.tbims.org/combi/chief> (accessed September 16, 2012).

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Whiteneck, G. G., Gerhart, K. A., et al. (2004). "Identifying environmental factors that influence the outcomes of people with traumatic brain injury." *J Head Trauma Rehabil* 19(3): 191-204. [Find it on PubMed](#)

Whiteneck, G. G., Harrison-Felix, C. L., et al. (2004). "Quantifying environmental factors: a measure of physical, attitudinal, service, productivity, and policy barriers." *Archives of physical medicine and rehabilitation* 85(8): 1324-1335. [Find it on PubMed](#)

Whiteneck, G.G., Gerhart K.A., Cusick C.P. Identifying Environmental Factors That Influence the Outcomes of People With Traumatic Brain Injury. *J Head Trauma Rehabil* 2004;19:3 191-204

Instrument name: Disability Rating Scale (DRS)					
Reviewer: Sue Saliga, PT, DHSc, CEEAA				Date of review: 9/8/2012	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input checked="" type="checkbox"/> Other: Eye opening, communication ability, motor response		<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input checked="" type="checkbox"/> Other: Feeding, toileting, grooming		<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input checked="" type="checkbox"/> Social function <input type="checkbox"/> Work <input checked="" type="checkbox"/> Other: Level of functioning, employability	
Link to rehabmeasures.org summary: Disability Rating Scale					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED			X		Used in research or for global assessment; there better measures to assess physical function.
In-Patient Rehab		X			
Outpatient (including Day rehab, Transitional		X			

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living)						
LTAC/SNF			X			
Home Health			X			
Overall Comments:	<ul style="list-style-type: none"> • Measurement across large span of recovery, across the continuum of care • can be self-administered or scored through interview patient or family member; can be completed by phone interview • can be completed retrospectively via medical record review • Easy to administer and perform the scoring • No proprietary issues • Primarily developed and tested in rehabilitation setting and community settings • Lack of detailed guidelines, vague scoring definitions, limited items representing function, note less sensitivity for higher functioning individuals (Malec, 2012) • Recommended as a supplementary measure by the Common Data Elements (CDE) Task Force 					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO		
		X	X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				Recommended by the Common Data Elements TBI Workgroup as a supplemental measure in TBI research.	
Additional information on this measure can be found at www.rehabmeasures.org: Disability Rating Scale						

References

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Instrument name: Disorders of Consciousness Scale (DOCS)					
Reviewer: Erin Donnelly, PT, MS, NCS				Date of review: 7/14/12	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input checked="" type="checkbox"/> Somatosensation <input checked="" type="checkbox"/> Other: Responses to stimuli in 8 categories: social knowledge, taste/swallowing, olfactory, proprioceptive/vestibular, auditory, visual, tactile and test readiness	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Disorders of Consciousness Scale					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	40-60 minute test time is not consistent with the acute

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						environment.
In-Patient Rehab		X				Validity is better established than reliability, but may be helpful for in depth assessment for those with disorders of consciousness.
Outpatient (including Day rehab, Transitional living)			X			Typically patients are not seen in this environment, so applicability is limited.
LTAC/SNF			X			Patients who do not qualify for rehabilitation may be seen in these settings. Although the time involved to complete the test may be difficult to justify, DOCS may be considered if shorter tools do not prove sensitive to small changes in responsiveness.
Home Health			X			
Overall Comments:	The DOCS has good psychometrics but would benefit from further assessment of the validity and reliability. The time to complete the test (40-60 minutes) is a limitation in many settings. DOCS is able to distinguish between the Vegetative and Minimally Conscious state but does not emergence from the Minimally Conscious State.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	

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Should this tool be required for entry level curricula?	YES		NO		Students may benefit from familiarity with the DOCS as an in depth assessment of responsiveness to sensory stimuli.
		X	X		
Research Use	YES		NO		Comments
Is this tool appropriate for use in intervention research studies?	X				Reviews of the DOCS supports its use in clinical trials and investigations examining mechanisms mediating neurobehavioral recovery from severe TBI.
Additional information on this measure can be found at www.rehabmeasures.org : Disorders of Consciousness Scale http://www.queri.research.va.gov/ptbri/docs_training/manual_2011.pdf					

References

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Instrument name: Dizziness Handicap Inventory (DHI)					
Reviewer: Irene Ward, PT, DPT, NCS				Date of review: June 10, 2012	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input checked="" type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:	<input type="checkbox"/> Balance/falls <input checked="" type="checkbox"/> Bed mobility <input checked="" type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input checked="" type="checkbox"/> Other: sports, dancing other "ambitious activities"			<input checked="" type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input checked="" type="checkbox"/> Home management <input checked="" type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input checked="" type="checkbox"/> Reintegration to community <input checked="" type="checkbox"/> Role function <input checked="" type="checkbox"/> Shopping <input checked="" type="checkbox"/> Social function <input checked="" type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Dizziness Handicap Inventory					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED			X		Not tested for this level of acuity.
In-Patient Rehab			X		Not tested for this level of acuity.
Outpatient (including Day rehab, Transitional living)		X			The studies were mainly done involving individuals residing in the community. Information on the validity of this measure in the TBI population is reported in the literature, but information on the reliability of this measure is lacking in TBI population.

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LTAC/SNF			X			Not tested for this level of acuity.
Home Health		X				The studies were mainly done involving individuals residing in the community. Information on the validity of this measure in the TBI population is reported in the literature, but information on the reliability of this measure is lacking in TBI population. An added benefit to this measure is that the only equipment needed is the score sheet.
Overall Comments:	This measure is mainly tested in individuals with vestibular dysfunction.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	This is a survey and so administration of the measure is not dependent upon an individual's ambulatory status. Not appropriate for individuals with a severe disorder of consciousness.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO		
	X		X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X					
Additional information on this measure can be found at www.rehabmeasures.org : Dizziness Handicap Inventory						

References

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Instrument name: Dynamic Gait Index (DGI)					
Reviewer: Katie Hays, PT, DPT				Date of review: 5/17/12	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:		<input checked="" type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input checked="" type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:		<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Dynamic Gait Index (DGI)					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED			X		
In-Patient Rehab			X		
Outpatient (including Day rehab, Transitional living)			X		Tested in stroke, MS, vestibular issues, older adults, and PD (Jonsdottir and Cattaneo, 2007, Cattaneo et al, 2006, Hall and Herdman, 2006, Shumway-Cook et al, 1997, Landers et al, 2008)

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LTAC/SNF			X			
Home Health			X			
Overall Comments:	Excellent psychometrics in other populations, however lack of literature in brain injury.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence			X			May have ceiling effect
II-Mild dependence			X			
III-Moderate dependence			X			
IV-Severe dependence				X		
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	FGA has less of a ceiling effect. Patient must be able to follow commands.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Per Lin et al, 2010 administration of FGA may be a better clinical decision. However, DGI is used in multiple populations, so exposure to the tool is good.	
	X		X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?			X		Recommend use of FGA (per Lin et al, 2010) in stroke population. Per Romero et al, 2011 “the psychometric properties of the DGI have not been investigated sufficiently.”	
Additional information on this measure can be found at www.rehabmeasures.org : Dynamic Gait Index (DGI)						

References

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Hall, C. D. and Herdman, S. J. (2006). "Reliability of clinical measures used to assess patients with peripheral vestibular disorders." *J Neurol Phys Ther* 30(2): 74-81. [Find it on PubMed](#)

Huang, S.L., Hsieh, C.L. et al (2011). "Minimal detectable change of the Timed "Up&Go" Test and the Dynamic Gait Index in people with Parkinson Disease." *Phys Ther* 91(114-121).

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Whitney, S. L., Hudak, M. T., et al. (2000). "The dynamic gait index relates to self-reported fall history in individuals with vestibular dysfunction." *J Vestib Res* 10(2): 99-105. [Find it on PubMed](#)

Instrument name: EuroQOL					
Reviewer: Sue Saliga, PT, DHSc, CEEAA				Date of review: 9/03/2012	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input checked="" type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other: anxiety, depression	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other: General mobility, usual activity			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input checked="" type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input checked="" type="checkbox"/> Other: Self-care	
Link to rehabmeasures.org summary: EuroQOL					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab			X		Further research necessary for this setting ; however, may be beneficial to consider its use, based on common data elements workgroup, recommended as a supplemental measure.
Outpatient (including			X		

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Day rehab, Transitional living)						
LTAC/SNF					X	
Home Health			X			
Overall Comments:	<ul style="list-style-type: none"> • Easy to administer, can be completed in a short amount of time, however, with proprietary considerations • Scoring is not complicated • There is still limited evidence on the reliability and validity of this measure in the TBI population, however, recommended as a supplemental measure by the Core Data Elements workgroup for TBI, which may warrant exposure of this tool as an outcomes measure in TBI research. 					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	Patients need to have cognitive skills to understand and respond to questions.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	There is still limited evidence on the reliability and validity of this measure in the TBI population. Recommended as a supplemental measure by the Core Data Elements workgroup for TBI, which may warrant exposure of this tool as an outcomes measure in TBI research.	
		X	X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				Recommended as a supplemental measure by the Core Data	

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			<p>Elements workgroup for TBI research, although further research on the psychometric properties on TBI population is recommended.</p>
<p>Additional information on this measure can be found at www.rehabmeasures.org: EuroQOL</p>			

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Wilde EA, Whiteneck GG, Bogner J, Bushnik T, Cifu DX, Dikmen S, French L, Giacino JT, Hart T, Malec JF, Millis SR, Novack TA, Sherer M, Tulskey DS, Vanderploeg RD, von Steinbuechel N. (2010). Recommendations for the use of common outcome measures in traumatic brain injury research. Arch Phys Med Rehabil.91:1650-60.

Instrument name: Four Functional Tasks for Wheelchairs					
Reviewer: Irene Ward, PT, DPT, NCS				Date of review: June 10, 2012	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input checked="" type="checkbox"/> Other: trunk control		<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input checked="" type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:		<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Four Functional Tasks for Wheelchair					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab				X	
Outpatient (including Day rehab, Transitional living)				X	
LTAC/SNF				X	
Home Health				X	
Overall Comments:	This exam requires over 20 minutes to administer. Also, only reliability data within a small sample size is reported in one study. The information is not				

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	specific to individuals with TBI. Further testing is recommended before formulating a conclusion on its utility in the TBI population					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	Ambulation is not required for administration of the wheelchair skills test. Not appropriate for individuals with a disorder of consciousness.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Psychometric data has not been identified for this measure in individuals with TBI.	
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?			X		Psychometric data has not been identified for this measure in individuals with TBI.	
Additional information on this measure can be found at www.rehabmeasures.org : Four Functional Tasks for Wheelchair						

References

May L.A., Butt C., Minor L., Kolbinson K., Tulloch K. (2003) Measurement reliability of functional tasks for persons who self-propel a manual wheelchair. *Arch Phys Med Rehabil.* 84:578-583.

May L.A., Butt C., Kolbinson K., Minor L., Tulloch K. (2004) Wheelchair back-support options: functional outcomes for persons with recent spinal cord injury. *Arch Phys Med Rehabil.* 85:1146-1150.

Instrument name: Four Square Step Test (FSST)	
Reviewer: Katie Hays, PT, DPT	Date of review: 5/14/12

TBIEDGE Task Force

ICF domain (check all that apply):					
___ Body structure/function <input checked="" type="checkbox"/> Activity ___ Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
___ Aerobic capacity/endurance ___ Ataxia ___ Cardiovascular/pulmonary status ___ Cognition ___ Coordination (non-equilibrium) ___ Dizziness ___ Dual Tasks ___ Fatigue ___ Flexibility ___ Muscle performance ___ Muscle tone / spasticity ___ Pain ___ Sensory integration ___ Somatosensation ___ Other:		<input checked="" type="checkbox"/> Balance/falls ___ Bed mobility ___ Gait (include stairs) ___ High Level mobility ___ Transfers ___ Wheelchair skills ___ Other:		___ Community function ___ Driving ___ Health and wellness ___ Home management ___ Leisure/Recreational activities ___ Life satisfaction ___ Quality of life ___ Reintegration to community ___ Role function ___ Shopping ___ Social function ___ Work ___ Other:	
Link to rehabmeasures.org summary: Four Square Step Test					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	No literature in this population
In-Patient Rehab			X		Good but limited psychometric data, including in transtibial amputation (Dite et al, 2007), but no literature in the BI population.
LTAC/SNF			X		
Home Health			X		No literature in this population, however could be easily administered in home setting and outpatient data utilized with this population.
Overall Comments:	Takes less than 5 minutes to complete				

Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence			X			
II-Mild dependence			X			
III-Moderate dependence			X			Per Blennerhassett and Jayalath, should be used with patients who are at least ambulatory with minA for at least 50 meters
IV-Severe dependence				X		
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	Needs to be able to follow 2-3 step commands.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO		
		X	X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?			X		Increasing use in research and an easy test to administer, however still limited information and psychometrics available.	
Additional information on this measure can be found at www.rehabmeasures.org : Four Square Step Test						

References

- Blennerhassett, J. M. and Jayalath, V. M. (2008). "The Four Square Step Test is a feasible and valid clinical test of dynamic standing balance for use in ambulant people poststroke." Arch Phys Med Rehabil 89(11): 2156-2161. [Find it on PubMed](#)
- Dite, W., Connor, H. J., et al. (2007). "Clinical identification of multiple fall risk early after unilateral transtibial amputation." Arch Phys Med Rehabil 88(1): 109-114. [Find it on PubMed](#)
- Dite, W. and Temple, V. A. (2002). "A clinical test of stepping and change of direction to identify multiple falling older adults." Arch Phys Med Rehabil 83(11): 1566-1571. [Find it on PubMed](#)

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Whitney, S. L., Marchetti, G. F., et al. (2007). "The reliability and validity of the Four Square Step Test for people with balance deficits secondary to a vestibular disorder." *Arch Phys Med Rehabil* 88(1): 99-104.

[Find it on PubMed](#)

Instrument name: Fullerton Advanced Balance Scale (FAB)					
Reviewer: Katie Hays, PT, DPT				Date of review: 5/20/12	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:		<input checked="" type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:		<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Fullerton Advanced Balance Scale					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED			X		
In-Patient Rehab			X		
Outpatient (including Day rehab, Transitional living)			X		Tested in older adults (Klein, 2009), fibromyalgia (Cherry , 2012)
LTAC/SNF			X		
Home Health			X		
Overall Comments:	May be a clinically useful scale, however limited psychometric data available				

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	overall, no literature in BI population.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence			X			
II-Mild dependence			X			
III-Moderate dependence			X			Requires ability to stand and perform balance tasks
IV-Severe dependence				X		Requires ability to stand and perform balance tasks
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	Pt must be able to follow 2-3 step commands. Multiple pieces of equipment required.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Test does not have enough psychometric information or widespread use at this time.	
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?			X		Further studies on psychometric properties and in the TBI population required.	
Additional information on this measure can be found at www.rehabmeasures.org: Fullerton Advanced Balance Scale						

References

Cherry, B.J., Zettel-Watson, L., et al (2012) "Positive associations between physical and cognitive performance measures in fibromyalgia." Arch Phys Med Rehabil 93:62-71.

Klein, P.J., Fielder, R.C., et al (2009) "Rasch analysis of the fullerton Advanced Balance (FAB) Scale." Physiother Can. 63(1):115-125.

Instrument name: Function In Sitting Test (FIST)					
Reviewer: Heidi Roth, DHS, PT, NCS				Date of review: 5/1/12	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:		<input checked="" type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:		<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Function In Sitting Test					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED			X		
In-Patient Rehab			X		
Outpatient (including Day rehab, Transitional living)			X		
LTAC/SNF			X		
Home Health			X		
Overall Comments:					

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	Good but insufficient psychometrics in acute stroke, no psychometrics in target population.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence				X		Must be able to follow 1-2 step directions.
II-Mild dependence			X			
III-Moderate dependence			X			
IV-Severe dependence			X			
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
	YES	NO	YES	NO		
Should this tool be required for entry level curricula?		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?			X		Insufficient psychometric data to support use in research, however limited options exist to evaluate sitting balance.	
Additional information on this measure can be found at www.rehabmeasures.org : Function In Sitting Test						

References

Gormon SL, Radtka S, et al. (2010). "Development and validation of the function in sitting test in adults with acute stroke." JNPT 34:150-160.

Instrument name: Functional Ambulation Category (FAC)					
Reviewer: Heidi Roth PT, DHS, NCS				Date of review: 4/20/12	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input checked="" type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Functional Ambulation Category					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED			X		Not tested in this setting, but clinically feasible.
In-Patient Rehab			X		
Outpatient (including Day rehab, Transitional living)			X		
LTAC/SNF			X		
Home Health			X		Not tested in this setting, but easy and fast to administer

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Overall Comments:	Insufficient data in target (BI) Population					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence				X		Appropriate to be used as a classification measure, however high ceiling effect at this functional level.
II-Mild dependence			X			
III-Moderate dependence			X			
IV-Severe dependence				X		High floor effect with this functional status, lack of responsiveness (Salter et al, 2008)
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	Incorporates requirement of verbal cues into category designation therefore incorporating safety / cognitive deficits within scale.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO		
		X	X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?			X			
Additional information on this measure can be found at www.rehabmeasures.org : Functional Ambulation Category						

References

Collen, F. M., Wade, D. T., et al. (1990). "Mobility after stroke: reliability of measures of impairment and disability." *Int Disabil Stud* 12(1): 6-9. [Find it on PubMed](#)

Holden, M. K., Gill, K. M., et al. (1986). "Gait assessment for neurologically impaired patients. Standards for outcome assessment." *Phys Ther* 66(10): 1530-1539. [Find it on PubMed](#)

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Kollen, B., Kwakkel, G., et al. (2006). "Time dependency of walking classification in stroke." *Phys Ther* 86(5): 618-625. [Find it on PubMed](#)

Martin, B. and Cameron, M. (1996). "Evaluation of walking speed and functional ambulation categories in geriatric day hospital patients." *Clinical rehabilitation* 10(1): 44.

Mehrholz, J., Wagner, K., et al. (2007). "Predictive validity and responsiveness of the functional ambulation category in hemiparetic patients after stroke." *Arch Phys Med Rehabil* 88(17908575): 1314-1319. [Find it on PubMed](#)

Salter, K, Jutai, J., et al. (2008). "21.3.7 Functional Ambulation Categories (FAC)." 21. Outcome measures in stroke rehabilitation. Last updated August 2008.

Instrument name: Functional Assessment Measure (FAM)					
Reviewer: Tammie Keller Johnson PT, DPT, MS				Date of review: 8/29/12	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input checked="" type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input checked="" type="checkbox"/> Other: Emotional status, safety judgment, attention		<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input checked="" type="checkbox"/> Gait (include stairs) <input checked="" type="checkbox"/> High Level mobility <input checked="" type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:		<input checked="" type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input checked="" type="checkbox"/> Reintegration to community <input checked="" type="checkbox"/> Role function <input type="checkbox"/> Shopping <input checked="" type="checkbox"/> Social function <input checked="" type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Functional Assessment Measure					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED			X		
In-Patient Rehab		X			
Outpatient (including Day rehab, Transitional living)		X			There is evidence that the FAM at discharge from rehabilitation has less of a "ceiling effect" than the FIM and is more strongly related to rehabilitation changes than the FIM alone (Hall et al., 1996, Seel et al.

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						2007).
LTAC/SNF			X			
Home Health		X				
Overall Comments:						
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence		X				
II-Mild dependence		X				
III-Moderate dependence		X				
IV-Severe dependence		X				
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	Every level of mobility from total dependence to complete independence may be ranked using the FIM+FAM					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	The FAM is designed to be given in conjunction with the FIM. The FAM is available for free to the public along with training and scoring sheets however, the FIM needs to be purchased from UDS	
		X	X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				Good to excellent psychometrics. Specifically designed to extend the utility of the FIM in the TBI population. Inter-rater reliability was good Mcpherson 1996.	
Additional information on this measure can be found at www.rehabmeasures.org : Functional Assessment Measure						
on COMBI site: http://www.tbims.org/combi/FAM/index.html						

References

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ABIEBR website. <http://www.abiebr.com/set/17-assessment-outcomes-following-acquiredtraumatic-brain-injury/177-functional-assessment>. Accessed 9/08/12.

Alcott D, Dixon K, et al: The reliability of the scales of the Functional Assessment Measure (FAM): Differences in abstractness between FAM scales. *Disability Rehabilitation* 19(9):355-358, 1997.
Requested 9/8

Cifu DX, Kreutzer JS, Marwitz JH, Miller M, Hsu GM, See1 RT, Englander J, High WM Jr, Zafonte R. Etiology and incidence of rehospitalization after traumatic brain injury: a multicenter analysis. *Arch Phys Med Rehabil* 1999;80:85-90

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Dodds, T. A., Martin, D. P., et al. (1993). "A validation of the functional independence measurement and its performance among rehabilitation inpatients." *Arch Phys Med Rehabil* 74: 531-536. [Find it on PubMed](#)

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Felmington KL, Baguley IJ, Crooks J. A comparison of acute and postdischarge predictors of employment 2 years after traumatic brain injury. *Arch Phys Med Rehabil* 2001;82:435-9.

Gray DS, Burnham RS. Preliminary outcome analysis of a long-term rehabilitation program for severe acquired brain injury. *Arch Phys Med Rehabil* 2000;81:1447-56.

[Grauwmeijer E](#), [Heijenbrok-Kal MH](#), [Haitsma IK](#), [Ribbers GM](#). A prospective study on employment outcome 3 years after moderate to severe traumatic brain injury. *Arch Phys Med Rehabil*. 2012 Jun;93(6):993-9. Epub 2012 Apr 12.

Gurka JA, Fekmingham KL, Baguley IJ, Schotte DE, Crooks J, Marosszeky JE. Utility of the Functional Assessment Measure after discharge from inpatient rehabilitation. *J Head Trauma Rehabil* 14(3):247-256, 1999.

Hall KM: Overview of functional assessment scales in brain injury rehabilitation. *NeuroRehabilitation* 2(4):97-112, 1992.

Hall, K. M., Bushnik, T., Lakisic-Kazacic, B., Wright, J., & Cantagallo, A. (2001). Assessing traumatic brain injury outcome measures for long-term follow-up of community-based individuals. *Arch Phys Med Rehabil*, 82(3), 367-374.

Hall KM, Hamilton B, Gordon WA, Zasler ND: Characteristics and comparisons of functional assessment indices: Disability Rating Scale, Functional Independence Measure and Functional Assessment Measure. *J Head Trauma Rehabil* 8(2):60-74, 1993.

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- Hall KM, Mann N, High WM, Wright JM, Kreutzer JS, Wood D: Functional measures after traumatic brain injury: ceiling effects of FIM, FIM+FAM, DRS, and CIQ. *J Head Trauma Rehabil* 11(5):27-39, 1996.
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- Jorge LL, Flavia Helena Garcia Marchi, Ana Clara Portela Hara and Linamara R. Battistella. Brazilian version of the Functional Assessment Measure: cross-cultural adaptation and reliability evaluation. *International Journal of Rehabilitation Research* 34:89–91 _c 2011
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- McPherson K, Pentland B: Disability in patients following traumatic brain injury-Which measure?. *Int J Rehab Res* 20(1):1-10, 1997.
- A.D. Nichol, A.M. Higgins, B.J. Gabbe, L.J. Murray, D.J. Cooper, P.A. Cameron Review: Measuring functional and quality of life outcomes following major head injury: Common scales and checklists Injury, *Int. J. Care Injured* 42 (2011) 281–287.
- Pentland B, McPherson K: An attempt to measure the effectiveness of early brain injury rehabilitation. *Health Bulletin* 52(6):438-445, 1994.
- Pentland 1999 present in RM PDFs
- J Powell, J Heslin, R Greenwood Community based rehabilitation after severe traumatic brain injury: a randomised controlled trial
J Neurol Neurosurg Psychiatry 2002;72:193–202
- Przbylski B, Dumont E, et al: Outcomes of enhanced physical and occupational therapy service in a nursing home setting. *Arch Phys Med Rehabil* 77(6):554-561, 1996.

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Sander AM, Fuchs KL, High WM Jr, Hall KM, Kreutzer JS, Rosenthal M. The Community Integration Questionnaire Revisited: An Assessment of Factor Structure and Validity The Community Integration Questionnaire revisited: assessment of factor structure and validity. *Arch Phys Med Rehabil* 1999;80:1303-8.

Ronald T. Seel, PhD; Greg Wright, MS, CRC, CCM; Tracey Wallace, MS, CCC-SLP; Sary Newman, PT; Leanne Dennis, CTRS, CCM The Utility of the FIM+FAM for Assessing Traumatic Brain Injury Day Program Outcomes *J Head Trauma Rehabil* Vol. 22, No. 5, pp. 267–277 Copyright _c 2007 Wolters Kluwer Health | Lippincott Williams & Wilkins

van Baalen B, E Odding, M PC van Woensel, M A van Kessel, M E Roebroek and H J Stam Reliability and sensitivity to change of measurement instruments used in a traumatic brain injury population *Clin Rehabil* 2006 20: 686

Wright, J. (2000). The Functional Assessment Measure. *The Center for Outcome Measurement in Brain Injury*. <http://www.tbims.org/combi/FAM> (accessed May 3, 2012).*

Instrument name: Functional Gait Assessment (FGA)					
Reviewer: Heidi Roth PT, DHS, NCS				Date of review: 4/1/12	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:		<input checked="" type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input checked="" type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:		<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Functional Gait Assessment (FGA)					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED			X		No studies in this setting, but clinically feasible.
In-Patient Rehab			X		
Outpatient (including Day rehab, Transitional living)			X		
LTAC/SNF			X		
Home Health			X		No studies in this setting, but

						clinically feasible.
Overall Comments:						
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence			X			Must be able to follow 2-3 step directions
II-Mild dependence			X			Must be able to follow 2-3 step directions
III-Moderate dependence				X		Unable to rate if requires physical assistance
IV-Severe dependence				X		Unable to rate if requires physical assistance
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO		
	X		X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				Strong psychometric data including in the stroke population, however no data in brain injury population. However, limited options exist to evaluate dynamic balance in BI population.	
Additional information on this measure can be found at www.rehabmeasures.org : Functional Gait Assessment (FGA)						

References

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Wrisley, D., Marchetti, G., et al. (2004). "Reliability, internal consistency, and validity of data obtained with the functional gait assessment." *Physical Therapy* 84(10): 906. [Find it on PubMed](#)

Wrisley, D., Walker, M., et al. (2003). "Reliability of the dynamic gait index in people with vestibular disorders." *Archives of physical medicine and rehabilitation* 84(10): 1528-1533. [Find it on PubMed](#)

Instrument name: Functional Independence Measure (FIM™)					
Reviewer: Tammie Keller Johnson PT, DPT, MS				Date of review: 9/03/12	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input checked="" type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input checked="" type="checkbox"/> Other: Communication		<input type="checkbox"/> Balance/falls <input checked="" type="checkbox"/> Bed mobility <input checked="" type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input checked="" type="checkbox"/> Transfers <input checked="" type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:		<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Functional Independence Measure (FIM)					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED			X		
In-Patient Rehab		X			
Outpatient (including Day rehab, Transitional living)			X		There is a ceiling effect which limits the usefulness of this tool in assessing change after discharge from rehabilitation
LTAC/SNF			X		
Home Health			X		

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Overall Comments:	Will take longer than 20 minutes to administer					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence			X			Ceiling effect was noted in individuals post rehab.
II-Mild dependence		X				
III-Moderate dependence		X				
IV-Severe dependence		X				
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	See below. Students need to especially be aware of this tool for working in the rehabilitation setting.	
	X		X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				FIM has demonstrated good inter-rater reliability and validity	
Additional information on this measure can be found at www.rehabmeasures.org : Functional Independence Measure (FIM) Review also found at COMBI site: http://tbims.org/combi/FIM/						

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Instrument name: Functional Reach Test (FRT) and Modified Functional Reach Test (mFRT)					
Reviewer: Heidi Roth PT, DHS, NCS				Date of review: 6/18/12	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:		<input checked="" type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:		<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Functional Reach Test (FRT) /Modified Functional Reach Test (mFRT)					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED			X		
In-Patient Rehab			X		
Outpatient (including Day rehab, Transitional living)			X		
LTAC/SNF			X		
Home Health			X		
Overall Comments:	Excellent psychometrics for FRT in other populations, however insufficient data in BI.				

Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
	I-Complete Independence			X		
II-Mild dependence			X			
III-Moderate dependence			X			
IV-Severe dependence				X		
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	Appropriate if individual is able to stand without assistance for short period of time and follow 1-2 step commands. Modified FRT is appropriate for individuals who must sit.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
	YES	NO	YES	NO	Common measure, used as a component of many other outcome measures (i.e. Berg, BEST test)	
Should this tool be required for entry level curricula?	X		X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				Limited evidence published with FRT / mFRT in BI, however excellent psychometrics in other populations such as stroke.	
Additional information on this measure can be found at www.rehabmeasures.org : Functional Reach Test (FRT) /Modified Functional Reach Test (mFRT)						

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Instrument name: Functional Self-Assessment Scale					
Reviewer: Karen McCulloch, PT, PhD, NCS				Date of review: May 17, 2012	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input checked="" type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input checked="" type="checkbox"/> Other: Emotional awareness Impulse control		<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input checked="" type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input checked="" type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input checked="" type="checkbox"/> Other: Dressing Shower		<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Functional Self Assessment Scale					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab			X		Focus is on activities that patients have opportunities to attempt on an inpatient unit.
Outpatient (including Day rehab, Transitional)				X	Other awareness measures may provide a better overview of activities that are

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living)					community based
LTAC/SNF				X	
Home Health				X	
Overall Comments:	This measure may provide a way to describe awareness issues on an inpatient basis by comparing therapist and patient ratings of abilities. Higher recommendations cannot be given secondary to the lack of data on the tool's psychometric properties.				
Ambulatory Status	4	3	2	1	Comments (Include recommendations based on cognitive status)
I-Complete Independence			X		May be useful if self-awareness issues are a concern for ambulatory patients in an institutional environment.
II-Mild dependence			X		
III-Moderate dependence			X		
IV-Severe dependence				X	
Overall Comments:	May prove useful as a way to describe impairments and/or a patient's functional limitations when they lack awareness of their deficits.				
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments
Should this tool be required for entry level curricula?	YES	NO	YES	NO	
		X		X	
Research Use	YES		NO		Comments
Is this tool appropriate for use in intervention research studies?			X		Reliability of measure has not been assessed. Needs additional validation.
Additional information on this measure can be found at www.rehabmeasures.org : Functional Self Assessment Scale					

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Instrument name: Functional Status Examination (FSE)					
Reviewer: Tammie Keller Johnson PT, DPT, MS			Date of review: 5/28/12		
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input checked="" type="checkbox"/> Cognition (executive function) <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:		<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input checked="" type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input checked="" type="checkbox"/> Other: major activity, personal care		<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input checked="" type="checkbox"/> Home management <input checked="" type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input checked="" type="checkbox"/> Social function <input type="checkbox"/> Work <input checked="" type="checkbox"/> Other: Financial independence, travel, standard of living	
Link to rehabmeasures.org summary: Functional Status Examination					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED			X		
In-Patient Rehab			X		
Outpatient (including Day rehab, Transitional living)			X		
LTAC/SNF			X		

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Home Health				X		
Overall Comments:	Responsiveness to change was significant, when measured in the 1-6month window post-injury					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	Includes death
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	FSE is a survey. Observation of skills is not required and therefore level of ambulation is not a factor for administering this test. FSE may be used on individuals with a disorder of consciousness.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO		
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				This measure has been utilized in research studies involving individuals with TBI to examine a variety of issues (i.e. ethnic and gender variations, return to leisure activities, etc.) The measure is not available from the developers, therefore the ratings for its use are lower than the psychometrics would support.	
Additional information on this measure can be found at www.rehabmeasures.org : Functional Status Examination						

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Instrument name: Glasgow Coma Scale (GCS)					
Reviewer: Erin Donnelly, PT, MS, NCS				Date of review: 6/1/12	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input checked="" type="checkbox"/> Other: Eye, verbal and motor responses	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Glasgow Coma Scale					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED			<input checked="" type="checkbox"/>		The GCS is a common indicator of injury severity, low scores early on correlate with mortality. Neurologists typically administer the GCS, therapists should understand and be able to interpret scores.
In-Patient Rehab				<input checked="" type="checkbox"/>	Beyond the acute environment, the GCS has limited utility for physical
Outpatient (including				<input checked="" type="checkbox"/>	

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Day rehab, Transitional living)						therapist outcome assessment.
LTAC/SNF					X	
Home Health					X	
Overall Comments:	The psychometrics for the GCS are varied, some more adequate than others. However, for a Physical Therapist this measure does not provide adequate information to guide treatment.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Despite limitations of the scale, this tool is highly utilized by acute care physicians and is often part of the patients' medical history. Therefore, entry level clinicians should understand the scale.	
	X		X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				The Glasgow Coma Scale can be utilized for research or data collection as an indicator of injury severity.	
Additional information on this measure can be found at www.rehabmeasures.org : Glasgow Coma Scale						

References

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Instrument name: Glasgow Outcome Scale- Extended (GOS-E)					
Reviewer: Erin Donnelly, PT, MS, NCS				Date of review: 6/12/12	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input checked="" type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input checked="" type="checkbox"/> Other: Symptoms associated with TBI; behavior regulation	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input checked="" type="checkbox"/> Other: ADL activities and mobility (described globally)			<input checked="" type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input checked="" type="checkbox"/> Home management <input checked="" type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input checked="" type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input checked="" type="checkbox"/> Shopping <input checked="" type="checkbox"/> Social function <input checked="" type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Glasgow Outcome Scale-Extended					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	The GOS-E is not appropriate for an acute injury since the extent of a patient's return to previous function is not clear.
In-Patient Rehab				X	

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Outpatient (including Day rehab, Transitional living)			X		The GOS-E may be helpful to compare current status to pre-injury status to document the extent of disability from injury. Information obtained from the GOS-E would not provide information that is beneficial for patients at this level of care.	
LTAC/SNF			X			
Home Health			X			
Overall Comments:	This measure is most utilized in outcomes research and clinical trials. It was designed to assess outcomes in groups rather than to evaluate individual patients, so may not be sufficiently sensitive to detect smaller changes that occur with PT.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	The GOS-E examines the effect of the TBI on the patient's functional level as compared to pre-injury status. Change in abilities could occur because of physical or cognitive limitations, so could be used for patients at all ambulation levels.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	The GOS-E is used in research when looking at overall outcomes after TBI. Therefore, students would benefit from exposure to the tool.	
		X	X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				This tool is primarily intended to describe outcome in groups of cases	

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			and not in individual assessment. There may be fewer ceiling problems with this tool than DRS.
Additional information on this measure can be found at www.rehabmeasures.org : Glasgow Outcome Scale-Extended			

References

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Instrument name: Global Fatigue Index (GFI)					
Reviewer: Irene Ward, PT, DPT, NCS				Date of review: September 1, 2012	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input checked="" type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input checked="" type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Global Fatigue Index					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab			X		
Outpatient (including Day rehab, Transitional living)		X			
LTAC/SNF				X	
Home Health			X		
Overall Comments:	The GFI is largely derived from the Multidimensional Assessment of Fatigue (MAF)				

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	and whose origin was in studying fatigue in individuals with Rheumatoid Arthritis. There are only a few studies that looked specifically at TBI and all of them included individuals who were living in the community and greater than one year post TBI.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	This is a survey. Ambulatory status is not relevant to its completion.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO		
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				This measure has been predominantly validated in populations other than TBI, however, there is some information on its utility in individuals with TBI which support its use in research.	
Additional information on this measure can be found at www.rehabmeasures.org : Global Fatigue Index						

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Williams PD, Press A, Williams AR, Piamjariyakul U, Keeter LM, Schultz J, Hunter K. Fatigue in mothers of infants discharged to the home on apnea monitors. *Applied Nursing Research*. 1999;12(2):69-77

Instrument name: High Level Mobility Assessment (HiMAT)					
Reviewer: Irene Ward, PT, DPT, NCS				Date of review: May 25, 2012	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other: trunk control	<input checked="" type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input checked="" type="checkbox"/> Gait (include stairs) <input checked="" type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: High Level Mobility and Assessment Tool (HiMAT)					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED			X		Not tested in patients with acute TBI, but shown to have excellent psychometric data for patients with chronic TBI.
In-Patient Rehab			X		Not tested in patients with acute TBI, but shown to have excellent psychometric data for patients with chronic TBI.

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Outpatient (including Day rehab, Transitional living)	X					
LTAC/SNF			X			
Home Health	X					
Overall Comments:	<ul style="list-style-type: none"> Excellent clinical utility. Requires approximately 10 minutes to administer. Specific items are required throughout the testing procedure. 					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence	X					
II-Mild dependence	X					Appropriate for individuals requiring only supervision, but not appropriate for patients requiring a gait aid.
III-Moderate dependence					X	Not appropriate for patients requiring continuous manual assistance.
IV-Severe dependence					X	Not appropriate if patient is non-ambulatory or requires more than one person to assist with ambulation.
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	Not appropriate for use individuals with a disorder of consciousness. Not recommended for those who are unable to follow multi-step commands.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO		
	X		X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X					
Additional information on this measure can be found at www.rehabmeasures.org : High Level Mobility and Assessment Tool (HiMAT)						

References

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Williams, G. P., Greenwood, K. M., et al. (2006). "High-Level Mobility Assessment Tool (HiMAT): interrater reliability, retest reliability, and internal consistency." *Phys Ther* 86(3): 395-400. [Find it on PubMed](#)

Williams, G. P. and Morris, M. E. (2009). "High-level mobility outcomes following acquired brain injury: a preliminary evaluation." *Brain Inj* 23(4): 307-312. [Find it on PubMed](#)

Instrument name: Home and Community Environment (HACE)					
Reviewer: Sue Saliga PT, DHSc, CEEAA				Date of review: 6/19/2012	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input checked="" type="checkbox"/> Community function <input checked="" type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input checked="" type="checkbox"/> Other: communication devices, transportation, attitudes, home mobility, community mobility, mobility devices, attitudes	
Link to rehabmeasures.org summary: Home and Community Environment					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab				X	
Outpatient (including Day rehab, Transitional living)			X		

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LTAC/SNF					X	
Home Health				X		
Overall Comments:	<ul style="list-style-type: none"> Limited research with TBI and other diagnostic groups Instrument looks at environment and community factors , not how well they perform in the community or home 					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO		
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?			X		Has potential however needs more testing. Further research on the psychometric properties on TBI population is recommended.	
Additional information on this measure can be found at www.rehabmeasures.org : Home and Community Environment						

References

Keysor, J., Jette, A., et al. (2005). "Development of the home and community environment (HACE) instrument." J Rehabil Med 37(1): 37-44. [Find it on PubMed](#)

Keysor, J. J., Jette, A. M., et al. (2006). "Association of environmental factors with levels of home and community participation in an adult rehabilitation cohort." Arch Phys Med Rehabil 87(12): 1566-1575. [Find it on PubMed](#)

Instrument name: Impact on Participation and Autonomy Questionnaire (IPAQ)					
Reviewer: Anna de Joya, PT, MS, NCS				Date of review: 06.18.2012	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input checked="" type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input checked="" type="checkbox"/> Other: Autonomy	
Link to rehabmeasures.org summary: Impact on Participation and Autonomy Questionnaire (IPAQ)					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab				X	
Outpatient (including Day rehab, Transitional living)			X		
LTAC/SNF				X	
Home Health			X		
Overall Comments:	<ul style="list-style-type: none"> • Good clinical utility for use in the outpatient and home settings 				

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	<ul style="list-style-type: none"> The only participation measure that addresses the importance of autonomy in individuals with disabilities While there are no studies on the psychometric properties for the TBI population, there are validation and reliability studies for general disability that can be considered reasonable for use in the TBI population. 					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Exposure to this tool is recommended as it is the only participation measure that addresses autonomy, an important domain under participation.	
		X	X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				It is gaining prominence as a participation outcome measure in rehabilitation research.	
Additional information on this measure can be found at www.rehabmeasures.org : Impact on Participation and Autonomy Questionnaire (IPAQ)						

References

Cardol M, de Haan RJ, van den Bos GA, De Jong BA, de Groot IJ. (1999). The development of a handicap assessment questionnaire: the Impact on Participation and Autonomy (IPA). Clin Rehabil 13:411-9.

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Cardol M, de Haan RJ, de Jong BA, van den Bos GAM, de Groot IJM. (2001). Psychometric properties of the impact on participation and autonomy questionnaire. *Arch Phys Med Rehabil* 82:001;82:210-6.[Find it on PubMed](#)

Cardol M, Beelen A, van den Bos GA, de Jong BA, de Groot IJ, de Haan RJ.(2002). Responsiveness of the Impact on Participation and Autonomy questionnaire. *Arch Phys Med Rehabil* 83:1524-9.

Sibley A, Kersten P, Ward CD, White B, Mehta R, George S. (2006). Measuring autonomy in disabled people: Validation of a new scale in a UK population. *Clin Rehabil.*20(9):793-803.

Instrument name: Life Satisfaction Questionnaire-9					
Reviewer: Anna de Joya, PT, MS, NCS				Date of review: 06.18.2012	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input checked="" type="checkbox"/> Leisure/Recreational activities <input checked="" type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input checked="" type="checkbox"/> Social function <input checked="" type="checkbox"/> Work <input type="checkbox"/> Other: psychological, financial, relationships, sexual life, self-care management	
Link to rehabmeasures.org summary: Life Satisfaction Questionnaire (LISAT-9)					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab				X	
Outpatient (including Day rehab, Transitional living)			X		
LTAC/SNF				X	
Home Health			X		

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Overall Comments:	<ul style="list-style-type: none"> The clinical utility of this measure in the outpatient and home health settings is good. There is good psychometric properties information for use in the TBI population, however, still insufficient to support a higher recommendation. 					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	There is still limited evidence on the reliability and validity of this measure in the TBI population.	
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?			X		Further research on the psychometric properties on TBI population is recommended.	
Additional information on this measure can be found at <u>www.rehabmeasures.org: Life Satisfaction Questionnaire (LISAT-9)</u>						

References

Anke, A. G. W. and Fugl-Meyer, A. R. (2003). "Life satisfaction several years after severe multiple trauma—a retrospective investigation." *Clinical rehabilitation* 17(4): 431. [Find it on PubMed](#)

Boonstra AM, Reneman MF, Stewart RE, Balk GA. (2012). Life satisfaction questionnaire (Lisat-9): reliability and validity for patients with acquired brain injury. *Int J Rehabil Res.* 35(2):153-60.

Eriksson G, Kottorp A, Borg J, Tham K. (2009). Relationship between occupational gaps in everyday life, depressive mood and life satisfaction after acquired brain injury. *J Rehabil Med.* 41(3):187-94.

Stålnacke BM. (2007)Community integration, social support and life satisfaction in relation to symptoms 3 years after mild traumatic brain injury. *Brain Inj.* 21(9):933-42.

Instrument name: Mayo Portland Adaptability Inventory-4					
Reviewer: Anna de Joya, PT, MS, NCS				Date of review: 07.04.2012	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input checked="" type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input checked="" type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other: Sensory, Motor and Cognitive	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input checked="" type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input checked="" type="checkbox"/> Other: hand function,			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input checked="" type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input checked="" type="checkbox"/> Work <input type="checkbox"/> Other: Self-Care, Transportation, Initiation, Money management, Adjustment (mood, interpersonal interactions)	
Link to rehabmeasures.org summary: Mayo Portland Adaptability Inventory-4					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab				X	
Outpatient (including Day rehab, Transitional living)			X		

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LTAC/SNF					X	
Home Health			X			
Overall Comments:	<ul style="list-style-type: none"> • Available for use without any proprietary considerations. • Administration, scoring and interpretation should be undertaken by trained professionals. The manual contains a recommendation that a person capable in advanced psychometrics should be available. • To maintain high levels of reliability, assessment should be completed by team consensus • Not appropriate for individuals with severe cognitive impairment 					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
	YES	NO	YES	NO		
Should this tool be required for entry level curricula?		X	X		<p>It is currently used widely in post-acute TBI care. The breadth of research in the TBI population in the post-acute care rehab setting and also its extension of use in the stroke population would make it beneficial for students to be exposed to this tool.</p> <p>It is recommended by the Common Data Elements TBI Workgroup as a supplemental measure in 2011 and will potentially see increased use of this</p>	

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Research Use	YES	NO	Comments
Is this tool appropriate for use in intervention research studies?	X		measure in the literature. It is recommended for consideration by the Common Data Elements TBI Workgroup as a supplemental measure in 2011 and will potentially see increased use of this measure in the literature.
Additional information on this measure can be found at www.rehabmeasures.org : Mayo Portland Adaptability Inventory-4			

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Instrument name: Medical Outcomes Study Short Form (SF-36), version 2					
Reviewer: Sue Saliga, PT, DHSc, CEEAA				Date of review: 09/03/2012	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input checked="" type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input checked="" type="checkbox"/> Other: Lifting, Carrying items, Climbing Stairs, Kneeling, Walking, Bathing, Dressing			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input checked="" type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input checked="" type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input checked="" type="checkbox"/> Role function <input type="checkbox"/> Shopping <input checked="" type="checkbox"/> Social function <input type="checkbox"/> Work <input checked="" type="checkbox"/> Other: General Mental Health, Health Transition, Vitality; Emotional Role	
Link to rehabmeasures.org summary: Medical Outcomes Study Short Form (SF-36), version 2					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab				X	
Outpatient (including Day rehab, Transitional living)			X		
LTAC/SNF				X	
Home Health			X		

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Overall Comments:	<ul style="list-style-type: none"> • Most research on population with stroke, however, most commonly used HQOL measure in population with TBI • Available in multiple languages • SF-12 appear promising, given its shorter length, but more research in TBI population • Not appropriate for individuals with severe cognitive impairment • One study with population with TBI showed mental health is important area of concern at follow up (Colantonio et.al. 1998) 					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Most commonly used HRQOL measure in the TBI population	
		X	X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				Limited research with the population with TBI restricts the usage in research. Further studies are needed A generic measure may not be sensitive enough to detect small changes in HRQOL in TBI population, while population specific HRQOL measures have only been recently developed. SF-36 is	

			<p>most commonly used, available research shows reasonable psychometrics; SF-12 is promising given its shorter length.</p>
<p>Additional information on this measure can be found at www.rehabmeasures.org: Medical Outcomes Study Short Form (SF-36), version 2</p>			

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Instrument name: Mini-Mental Status Exam (MMSE)					
Reviewer: Karen McCulloch, PT, PhD, NCS				Date of review: May 17, 2012	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input checked="" type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:		<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:		<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Mini Mental Status Exam					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab				X	
Outpatient (including Day rehab, Transitional living)				X	
LTAC/SNF				X	
Home Health				X	
Overall Comments:	The MMSE, although widely used as a measure to identify cognitive impairment in older adults, shows limitations in identifying cognitive issues				

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	following stroke and with older adults with TBI. One study focused on Traumatic Brain Injury noted that one limitation is the lack of items addressing executive function, which is often impaired following Traumatic Brain Injury. Another study did comment that there is possible utility of attention items in identifying those people who are not impaired.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	Appropriateness of the MMSE for use with TBI is not related to ambulatory status, rather cognitive ability.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Not recommended as measure students learn about for use with TBI.	
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?			X		May be a consideration for research with older adults who have TBI.	
Additional information on this measure can be found at www.rehabmeasures.org: Mini Mental Status Exam						

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Instrument name: Modified Ashworth Scale (MAS)					
Reviewer: Irene Ward, PT, DPT, NCS				Date of review: May 25, 2012	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input checked="" type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other: trunk control		<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:		<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Ashworth Scale, Modified (MAS)					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED			X		Not tested in patients with acute TBI, but shown to have adequate to excellent reliability in patients with chronic TBI.
In-Patient Rehab		X			
Outpatient (including Day rehab, Transitional living)		X			
LTAC/SNF		X			

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Home Health		X				
Overall Comments:	<ul style="list-style-type: none"> • Shown to have adequate to excellent reliability in patients with chronic TBI. • Excellent clinical utility. Requires less than 5 minutes to administer. 					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	<ul style="list-style-type: none"> • This test does not require the patient to follow any commands. Although not specifically tested, may be appropriate for patients with a disorder of consciousness. 					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Because it is still considered a standard for assessing/ grading hypertonicity, students should learn to administer the measure.	
	X		X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				It is already widely used in research; However, operational definitions should be established to improve its reliability.	
Additional information on this measure can be found at www.rehabmeasures.org : Ashworth Scale, Modified (MAS)						

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Instrument name: Modified Fatigue Impact Scale (MFIS)					
Reviewer: Tammie Keller Johnson PT, DPT, MS				Date of review: 4/29/12	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structurefunction <input type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input checked="" type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:		<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:		<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Modified Fatigue Impact Scale					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab			X		
Outpatient (including Day rehab, Transitional living)			X		Unfortunately not specific to TBI data published for the MFIS but some for the FIS. The FIS has been shown to be valid and reliable for the TBI population.
LTAC/SNF			X		
Home Health			X		

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Overall Comments:	Limitations The MFIS is a shortened modification of the Fatigue Impact Scale, designed as a self-report measure to rate fatigue in Multiple Sclerosis. Psychometric testing has not been conducted in the TBI population.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	This is a survey therefore the completion of it is not dependent upon an individual's ambulation status.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Yes, because it has been recommended by the MS Edge task force as a OM for the measurement of fatigue	
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?			X		Recommend additional testing to determine the psychometric values with in the TBI population.	
Additional information on this measure can be found at www.rehabmeasures.org : Modified Fatigue Impact Scale						

References

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Kos D, Kerckhofs E, Carrea I, Verza R, Ramos M, Jansa J. Evaluation of the Modified Fatigue Impact Scale in four different European countries. *Mult Sclerosis*. 2005; 11: 76-80.

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Ponsford J, Ziino C, Rajaratnam S, et al. Fatigue and sleep disturbance following traumatic brain injury—their nature, causes, and potential treatments. *The Journal Of Head Trauma Rehabilitation* [serial online]. May 2012;27(3):224-233. Available from: MEDLINE with Full Text, Ipswich, MA. Accessed June 22, 2012.

Rietberg MB, Van Wegen EH, Kwakkel G. Measuring fatigue in patients with multiple sclerosis: reproducibility, responsiveness and concurrent validity of three Dutch self-report questionnaires. *Disability and Rehabilitation*. 2010 March 26 (Epub ahead of print).

Sendroy-Terrill M, Whiteneck GG, Brook CA. Aging with traumatic brain injury: cross-sectional follow-up of people receiving inpatient rehabilitation over more than 3 decades. *Arch Phys Med Rehabil*. 2010;91:489-496.

Tellez N, Rio J, Tintore M, Galan I, Montalban X. Does the modified fatigue impact scale offer a more comprehensive assessment of fatigue in MS? *Mult Scler*. 2005;11:198-202.

Instrument name: Montreal Cognitive Assessment (MoCA)					
Reviewer: Karen McCulloch, PT, PhD, NCS				Date of review: 10/9/12	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input checked="" type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Montreal Cognitive Assessment					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab			X		Likely to be most useful in rehabilitation or outpatient settings when a cognitive screen may be useful to initiate referral for other services.
Outpatient (including Day rehab, Transitional living)			X		
LTAC/SNF				X	
Home Health				X	
Overall Comments:	This measure has not been tested in TBI, but shows promise and sound				

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	psychometrics as a screening tool for other groups with cognitive impairment, improving on the MMSE in many respects.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
	YES	NO	YES	NO	Students would benefit from knowing about this measure for other populations, although it can't be strongly recommended for TBI use.	
Should this tool be required for entry level curricula?		X	X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				The MoCA may prove very useful for research studies, although requires some TBI validation.	
Additional information on this measure can be found at www.rehabmeasures.org : Montreal Cognitive Assessment						

References

Nasreddine, Z. S., Phillips, N. A., Bedirian, V., Charbonneau, S., Whitehead, V., Collin, I., Cummings, J. L., and Chertkow, H. 2005. "The Montreal Cognitive Assessment, MoCA: a Brief Screening Tool for Mild Cognitive Impairment." *J.Am.Geriatr.Soc.* 53(4):695-99.

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Smith T, Gildeh N, Holmes C. The Montreal Cognitive Assessment: validity and utility in a memory clinic setting. *Canadian Journal of Psychiatry* 2007 52(5): 329-332.

Toglia J, Fitzgerald KA, O'Dell MW, Mastrogiovanni AR, Lin CD. The Mini-Mental State Examination and Montreal Cognitive Assessment in persons with mild subacute stroke: relationship to functional outcome. *Arch Phys Med Rehabil* 2011; 92: 792-8.

Instrument name: Moss Attention Rating Scale					
Reviewer: Karen McCulloch, PT, PhD, NCS				Date of review: 6/18/12	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input checked="" type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:		<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:		<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Moss Attention Rating Scale					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED		X			May be appropriate in the acute hospital for patients with extended stays and moderate to severe TBI although has not been tested in this environment
In-Patient Rehab	X				Population used for development of the test
Outpatient (including			X		

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Day rehab, Transitional living)						May be appropriate if attention problems are severe
LTAC/SNF			X			
Home Health			X			
Overall Comments:	Recommended for use in acute hospital or inpatient rehabilitation for patients with moderate to severe TBI. It is based on observable behavior and is not recommended for the assessment of patients in a vegetative or minimally conscious state.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO		
	X		X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X					
Additional information on this measure can be found at www.rehabmeasures.org: Moss Attention Rating Scale						

References

Hart T, Whyte J, Ellis C, Chervoneva I. Construct validity of an attention rating scale for traumatic brain injury. *Neuropsychology*. 2009 Nov;23(6):729-35.

Hart T, Whyte J, Millis S, Bode R, Malec J, Richardson RN, Hammond F. Dimensions of disordered attention in traumatic brain injury: further validation of the Moss Attention Rating Scale. *Arch Phys Med Rehabil*. 2006 May;87(5):647-55.

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Whyte J, Hart T, Ellis CA, Chervoneva I. The Moss Attention Rating Scale for traumatic brain injury: further explorations of reliability and sensitivity to change. Arch Phys Med Rehabil. 2008 May;89(5):966-73.

Whyte J, Hart T, Bode RK, Malec JF. The Moss Attention Rating Scale for traumatic brain injury: initial psychometric assessment. Arch Phys Med Rehabil. 2003 Feb;84(2):268-76.

Instrument name: Motivation for Traumatic Brain Injury Rehabilitation Questionnaire (MOT-Q)					
Reviewer: Karen McCulloch, PT, PhD, NCS				Date of review: 7/27/12	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> X Body structure/function <input type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input checked="" type="checkbox"/> X Other: Attitudes toward rehabilitation, motivation	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Motivation for Traumatic Brain Injury Rehabilitation Questionnaire					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab			X		
Outpatient (including Day rehab, Transitional living)			X		Limited validity testing, but could be useful for identifying attitudinal barriers to rehabilitation success
LTAC/SNF				X	
Home Health				X	
Overall Comments:	Guidelines for interpretation are limited, limited data available				

Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO		
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				Could prove useful for addressing disincentives to rehabilitation success in military population in particular (group used for development)	
Additional information on this measure can be found at www.rehabmeasures.org : Motivation for Traumatic Brain Injury Rehabilitation Questionnaire						

References

Bains B, Powell T, Lorenc L. An exploratory study of mental representations for rehabilitation based on the theory of planned behaviour. *Neuropsych Rehabilitation* 2007; 17: 174-191.

Chervinsky AB, Ommaya AK, deJonge M, Spector J, Schwab K, Salazar AM. Motivation for traumatic brain injury rehabilitation (MOT-Q): Reliability, factor analysis and relationship to MMPI-2 variables. *Arch Clin Neuropsych* 1998; 13: 433-446.

Instrument name: Neurological Outcome Scale for Traumatic Brain Injury (NOS-TBI)					
Reviewer: Erin Donnelly, PT, MS, NCS				Date of review: 6/30/12	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input checked="" type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input checked="" type="checkbox"/> Cognition <input checked="" type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input checked="" type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input checked="" type="checkbox"/> Somatosensation <input checked="" type="checkbox"/> Other: items typically included in a neurological exam – cranial nerve tests, language, perception	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input checked="" type="checkbox"/> Other: tandem gait			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Neurological Outcome Scale for Traumatic Brain Injury					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED			X		This tool may be useful in the acute care stage as it is brief and parallels a typical neurological examination and has excellent psychometrics and good clinical

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						utility.
In-Patient Rehab			X			The focus is primarily on body/structure and function issues, not providing information on functional abilities which become more of an emphasis in this stage of care.
Outpatient (including Day rehab, Transitional living)			X			In the outpatient environment the focus is much more on activities and participation, which are not addressed with this tool.
LTAC/SNF			X			This tool may be beneficial for the classification of patients at this level of care if the onset is relatively acute. If patient is more chronic, may not be as beneficial.
Home Health			X			This information may be of assistance to the Home Health PT, if scale has been used previously and patient is somewhat acute post-injury
Overall Comments:						
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	Testing instructions take into account possible cognitive and language issues that could impair responses
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	Ambulation (tandem) is a supplemental item, but doesn't count toward the total score. The tool is likely to be more beneficial for patients with greater neurological deficits, so it is not recommended for patients who are completely independent with mobility.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	

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Should this tool be required for entry level curricula?	YES	NO	YES	NO	This tool was developed to bridge the gap in TBI outcome research, with the goal of producing a sensitive measure to demonstrate progress of TBI interventions by using the It was developed NIHSS as a model. It is possible that this scale may become more of a gold standard for stratification of TBI in the acute phase of care. Students may benefit from exposure to it in the literature.
		X	X		
Research Use	YES		NO		Comments
Is this tool appropriate for use in intervention research studies?	X				It is suggested that the NOS-TBI be used to stratify for injury severity and as an outcome measure in randomized clinical trials. It may complement other OM's by the addition of critical elements from the neurological exam if those impairments are the focus of intervention.
Additional information on this measure can be found at www.rehabmeasures.org: Neurological Outcome Scale for Traumatic Brain Injury					

References

McCauley, S.R., Wilde, E.A., Kelly, T.M., Weyand, A.M., et al. (2010). "The Neurological Outcome Scale for Traumatic Brain Injury (NOS-TBI): II. Reliability and Convergent Validity". *Journal of Neurotrauma*, 27(6): 991-997.

Wilde, E.A., McCauley, S.R., Levin, T.M., Pedroza, C., et al. (2010). "Feasibility of the Neurological Outcome Scale for Traumatic Brain Injury (NOS-TBI) in adults". *Journal of Neurotrauma*, 27(6), 975-981.

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Wilde, E.A., McCauley, S.R., Kelly, T.M. Weyand, A.M., et al. (2010). "The Neurological Outcome Scale for Traumatic Brain Injury (NOS-TBI): I. Construct Validity. *Journal of Neurotrauma*, 27(6), 983-989.

Instrument name: Neuro-QOL					
Reviewer: Karen McCulloch, PT, PhD, NCS				Date of review: 7/29/12	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input checked="" type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input checked="" type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input checked="" type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input checked="" type="checkbox"/> Other: Sleep disturbance, Emotional/behavioral dyscontrol, Stigma, psychological issues	<input type="checkbox"/> Balance/falls <input checked="" type="checkbox"/> Bed mobility <input checked="" type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input checked="" type="checkbox"/> Other: UE function, ADL			<input checked="" type="checkbox"/> Community function <input type="checkbox"/> Driving <input checked="" type="checkbox"/> Health and wellness <input checked="" type="checkbox"/> Home management <input checked="" type="checkbox"/> Leisure/Recreational activities <input checked="" type="checkbox"/> Life satisfaction <input checked="" type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input checked="" type="checkbox"/> Role function <input type="checkbox"/> Shopping <input checked="" type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Neuro-QOL					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	Self-report nature of the items on this measure with significant focus on participation issues makes this less relevant for acute environments.
In-Patient Rehab				X	
Outpatient (including			X		

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Day rehab, Transitional living)						
LTAC/SNF			X			
Home Health			X			
Overall Comments:	NeuroQOL short forms are self-report measures available across the ICF domains covering issues that are important for patients with neurologic involvement for many reasons. Focus groups addressing TBI suggest that there are some areas where NeuroQOL may fall short in the areas of emotional health, social participation and loss of autonomy. NeuroQOL measures are being tested with TBI in a version that will be titled TBIQOL, but results have not been published yet.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	Items from different short forms are applicable to individuals at different ambulatory status levels.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	This measure has not been confirmed as a match to patients with TBI in published literature. Students should be aware of this approach that allows for brief computer assisted testing in areas pertinent to PT. The nature of the development of the tool and its access without charge is a significant benefit.	
		X	X			
Research Use	YES		NO		Comments	
Is this tool appropriate	X					

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for use in intervention research studies?			
Additional information on this measure can be found at www.rehabmeasures.org : Neuro-QOL			

References

Cella D, Lai JS, Nowinski CJ, Victorson D, Peterman A, Miller D, Bethoux F, Heinemann A, Rubin S, Cavazos JE, Reder AT, Sufit R, Simuni T, Holmes GL, Siderowf A, Wojna V, Bode R, McKinney N, Podrabsky T, Wortman K, Choi S, Gershon R, Rothrock N, Moy C. Neuro-QOL: brief measures of health-related quality of life for clinical research in neurology. *Neurology*. 2012 Jun 5;78(23):1860-7.

Carlozzi NE, Tulskey DS, Kisala PA. Traumatic brain injury patient-reported outcome measure: identification of health-related quality-of-life issues relevant to individuals with traumatic brain injury. *Arch Phys Med Rehabil*. 2011 Oct;92(10 Suppl):S52-60.

National Institute of Neurological Disorders and Stroke (NINDS): User Manual for the Quality of Life in Neurological Disorders (NeuroQOL) Measures, version 1.0, September 2010. Accessed at www.neuroqol.org.

National Institute of Neurological Disorders and Stroke (NINDS): Measuring Quality of Life in Neurological Disorders: Final Report of the NeuroQOL Study. Accessed at www.neuroqol.org.

Instrument name: Orientation Log (O-Log)					
Reviewer: Karen McCulloch, PT, PhD, NCS				Date of review: 6/12/12	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input checked="" type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input checked="" type="checkbox"/> Other: Primarily orientation, excluding questions about memory of accident	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Orientation Log					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED			X		Has not been tested in the acute environment, but could prove useful given simplicity and focus on basic orientation.
In-Patient Rehab		X			Useful as a measure for patients who are disoriented. Avoids continued questioning about recall

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						of injury (as in GOAT) so may be better for serial testing.
Outpatient (including Day rehab, Transitional living)					X	
LTAC/SNF					X	
Home Health					X	
Overall Comments:	Has only been validated during inpatient rehabilitation. Note Cog-Log was designed as a companion measure. Rasch analysis conducted by Kean et al (2011) showed limitations of the O-Log, suggesting it may only be useful to dichotomize those with PTA from those who are not in PTA. Orientation resolves in many patients prior to discharge from rehabilitation, so may not be useful post-acutely to capture complexities of cognitive deficits.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Awareness of this and GOAT as methods to determine duration of PTA is recommended.	
		X	X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X					
Additional information on this measure can be found at www.rehabmeasures.org : Orientation Log						

References

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- Alderson, A. L., & Novack, T. A. (2002). Measuring recovery of orientation during acute rehabilitation for traumatic brain injury: value and expectations of recovery. . *J Head Trauma Rehabil*, *17*(3), 210-219.
- Dowler, R. N., Bush, B. A., Novack, T. A., & Jackson, W. T. (2000). Cognitive orientation in rehabilitation and neuropsychological outcome after traumatic brain injury. *Brain Inj*, *14*(2), 117-123.
- Frey, K. L., Rojas, D. C., Anderson, C. A., & Arciniegas, D. B. (2007). Comparison of the O-Log and GOAT as measures of posttraumatic amnesia. *Brain Inj*, *21*(5), 513-520.
- Jackson, W. T., Novack, T. A., & Dowler, R. N. (1998). Effective serial measurement of cognitive orientation in rehabilitation: the Orientation Log. *Arch Phys Med Rehabil*, *79*(6), 718-720.
- Kean, J., Abell, M., Malec, J. F., & Trzepacz, P. T. (2011). Rasch analysis of the orientation log and reconsideration of the latent construct during inpatient rehabilitation. *J Head Trauma Rehabil*, *26*(5), 364-374.
- Novack, T. A., Dowler, R. N., Bush, B. A., Glen, T., & Schneider, J. J. (2000). Validity of the Orientation Log, relative to the Galveston Orientation and Amnesia Test. *J Head Trauma Rehabil*, *15*(3), 957-961.
- Penna, S., & Novack, T. A. (2007). Further validation of the Orientation and Cognitive Logs: their relationship to the Mini-Mental State Examination. *Arch Phys Med Rehabil*, *88*(10), 1360-1361.

Instrument name: Participation Assessment with Recombined Tools-Objective (PART-O)					
Reviewer: Anna de Joya, PT, MS, NCS				Date of review: 06.18.2012	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input checked="" type="checkbox"/> Health and wellness <input checked="" type="checkbox"/> Home management <input checked="" type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input checked="" type="checkbox"/> Productivity <input type="checkbox"/> Quality of life <input checked="" type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input checked="" type="checkbox"/> Shopping <input checked="" type="checkbox"/> Social function/relationships <input checked="" type="checkbox"/> Work <input type="checkbox"/> Other <input checked="" type="checkbox"/> Other: <u>School</u>	
Link to rehabmeasures.org summary: Participation Assessment with Recombined Tools- Objective (PART-O)					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab				X	
Outpatient (including Day rehab, Transitional living)			X		
LTAC/SNF				X	
Home Health			X		
Overall Comments:	<ul style="list-style-type: none"> • Easy to administer, can be completed in a reasonable amount of time 				

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	<p>and no proprietary considerations.</p> <ul style="list-style-type: none"> • Items are more related to roles and participation upon discharge from the acute care and in-patient rehab or SNF settings. • Learning how to perform scoring is needed and may be complicated for use in the clinic, unless sophisticated data entry is available. • Appropriate for individuals with moderate to severe TBI. • This is a fairly new measure and while it has been assessed specifically in the TBI population, only 2 studies to date have looked at the psychometric properties of this measure. 					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
	YES	NO	YES	NO		
Should this tool be required for entry level curricula?		X		X	This is a fairly new measure of participation. Further studies in the TBI population are needed in order for stronger recommendation to be made.	
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				It has been adopted as the measure of participation by the TBI model systems. The psychometric properties are considered acceptable for utilization in rehabilitation research, although future studies are recommended.	

Additional information on this measure can be found at [www.rehabmeasures.org: Participation Assessment with Recombined Tools- Objective \(PART-O\)](http://www.rehabmeasures.org: Participation Assessment with Recombined Tools- Objective (PART-O))

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Bogner JA, Whiteneck GG, Corrigan JD, Lai J-S, Dijkers MP, Heinemann AW. (2011). Comparison of scoring methods for the Participation Assessment with Recombined Tools–Objective. *Arch Phys Med Rehabil* ;92:552-63.

Whiteneck GG, Dijkers MP, Heinemann AW, Bogner JA, Bushnik T, Cicerone KD, Corrigan JD, Hart T, Malec JF, Millis SR. (2011). Development of the Participation Assessment With Recombined Tools–Objective for use after traumatic brain injury. *Arch Phys Med Rehabil* ;92:542-51.

Instrument name: Participation Measure for Post-Acute Care (PM-PAC)					
Reviewer: Anna de Joya, PT, MS, NCS				Date of review: 06.18.2012	
ICF domain (check all that apply):					
<input type="checkbox"/> Body function/structure <input type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input checked="" type="checkbox"/> Community function <input type="checkbox"/> Driving <input checked="" type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input checked="" type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input checked="" type="checkbox"/> Social function <input checked="" type="checkbox"/> Work <input checked="" type="checkbox"/> Other: Education, Communication, Relationships; Mobility	
Link to rehabmeasures.org summary: Participation Measure for Post-Acute Care					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab				X	
Outpatient (including Day rehab, Transitional living)				X	
LTAC/SNF				X	

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Home Health					X	
Overall Comments:	<ul style="list-style-type: none"> While this measure has good psychometric properties, it is complex and may not be appropriate for use with patients with cognitive impairments. No scoring algorithm is publicly available 					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO		
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?			X		It combines objective and subjective ratings in a single construct and has uneven content coverage across domains; not recommended for use with participants with cognitive impairments due to its complexity; no scoring algorithm published at this time.	
Additional information on this measure can be found at www.rehabmeasures.org : Participation Measure for Post-Acute Care						

References

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Gandek, B., Sinclair, S. J., et al. (2007). "Development and initial psychometric evaluation of the participation measure for post-acute care (PM-PAC)." *Am J Phys Med Rehabil* 86(1): 57-71. [Find it on PubMed](#)

Jette AM, Haley SM. Contemporary measurement techniques for rehabilitation outcomes assessment. (2005). *J Rehabil Med*.37(6):339-45.

Jette AM, Keysor J, Coster W, Ni P, Haley S. (2005). Beyond function: predicting participation in a rehabilitation cohort. *Arch Phys Med Rehabil*. 86:2087-94.

Keysor JJ, Jette AM, Coster W, Bettger JP, Haley SM. (2006). Association of environmental factors with levels of home and community participation in an adult rehabilitation cohort. *Arch Phys Med Rehabil* 87:1566-75.

Magasi, S. and Post, M. W. (2010). "A comparative review of contemporary participation measures' psychometric properties and content coverage." *Arch Phys Med Rehabil* 91(9 Suppl): S17-28. [Find it on PubMed](#)

Instrument name: Participation Objective, Participation Subjective (POPS)					
Reviewer: Anna de Joya, PT, MS, NCS				Date of review: 06.18.2012	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input checked="" type="checkbox"/> Home management <input checked="" type="checkbox"/> Leisure/Recreational activities <input checked="" type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input checked="" type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input checked="" type="checkbox"/> Shopping <input checked="" type="checkbox"/> Social function <input checked="" type="checkbox"/> Work <input checked="" type="checkbox"/> Other: Domestic Life; Transportation; Interpersonal relationships	
Link to rehabmeasures.org summary: Participation Objective, Participation Subjective					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab				X	
Outpatient (including Day rehab, Transitional living)				X	
LTAC/SNF				X	

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Home Health				X		
Overall Comments:	<ul style="list-style-type: none"> While may be clinically feasible, especially in the outpatient setting (ie, can be completed in a short amount of time and no proprietary considerations), psychometric properties are limited to support a higher recommendation Scoring algorithm is available however, sophisticated data entry is needed to obtain the score. 					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	It is a unique measure that takes into consideration both the objective and subjective aspects of participation, however, further studies recommended to strengthen the psychometric properties of this measure.	
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?			X		Limited psychometric data may limit its utility. Further studies recommended to strengthen the psychometric properties of this measure.	
Additional information on this measure can be found at www.rehabmeasures.org : Participation Objective, Participation Subjective						

References

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Cantor JB, Ashman T, Gordon W, Ginsberg A, Engmann C, Egan M, Spielman L, Dijkers M, Flanagan S. (2008). Fatigue after traumatic brain injury and its impact on participation and quality of life. *J Head Trauma Rehabil.* 23(1):41-51.

Curtin M, Jones J, Tyson GA, Mitsch V, Alston M, McAllister L. (2011). Outcomes of participation objective, participation subjective (POPS) measure following traumatic brain injury. *Brain Inj.* 25(3):266-73.

Instrument name: Participation Survey of Mobility Limited people (PARTS-M)					
Reviewer: Anna de Joya, PT, MS, NCS				Date of review: 06.18.2012	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input checked="" type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input checked="" type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input checked="" type="checkbox"/> Reintegration to community <input checked="" type="checkbox"/> Role function <input type="checkbox"/> Shopping <input checked="" type="checkbox"/> Social function <input checked="" type="checkbox"/> Work <input checked="" type="checkbox"/> Other: Self-care, mobility, interpersonal relationships	
Link to rehabmeasures.org summary: Participation Survey of Mobility Limited people					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab				X	
Outpatient (including Day rehab, Transitional living)				X	
LTAC/SNF				X	
Home Health				X	
Overall Comments:	<ul style="list-style-type: none"> This measure is long and complex, making its utility prohibitive in 				

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	clinical settings <ul style="list-style-type: none"> • Scoring is complex • One quarter of the items are related to self-care 					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO		
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?			X		Does not take into consideration other domains such as level of independence, control, autonomy, etc; long and complex; scoring is complex.	
Additional information on this measure can be found at www.rehabmeasures.org: Participation Survey of Mobility Limited people						

References

Gray, D. B. and Hendershot, G. E. (2000). "The ICIDH-2: developments for a new era of outcomes research." Archives of physical medicine and rehabilitation 81(12; SUPP/2): 10-14. [Find it on PubMed](#)

Gray, D. B., Hollingsworth, H. H., et al. (2006). "PARTS/M: Psychometric properties of a measure of participation for people with mobility impairments and limitations." Archives of physical medicine and rehabilitation 87(2): 189-197. [Find it on PubMed](#)

Instrument name: Patient Competency Rating Scale					
Reviewer: Karen McCulloch, PT, PhD, NCS				Date of review: 6/18/2012	
ICF domain (check all that apply):					
<input type="checkbox"/> X <input type="checkbox"/> Body structure/function <input type="checkbox"/> X <input type="checkbox"/> Activity <input type="checkbox"/> X <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input checked="" type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input checked="" type="checkbox"/> Other: Emotional control	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input checked="" type="checkbox"/> Other: ADL activities			<input checked="" type="checkbox"/> Community function <input checked="" type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input checked="" type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input checked="" type="checkbox"/> Reintegration to community <input checked="" type="checkbox"/> Role function <input type="checkbox"/> Shopping <input checked="" type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Patient Competency Rating Scale					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab				X	
Outpatient (including Day rehab, Transitional living)				X	
LTAC/SNF				X	
Home Health				X	
Overall Comments:	Psychometrics of tool is insufficiently studied to warrant recommendation at a higher level. There is also limited guidance for				

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	interpretation of scores. Comparison of post-injury ability to pre-injury ability may be more beneficial (as in Awareness Questionnaire).					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence				X		
II-Mild dependence				X		
III-Moderate dependence				X		
IV-Severe dependence				X		
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO		
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?			X			
Additional information on this measure can be found at www.rehabmeasures.org : Patient Competency Rating Scale						

References

Fordyce DJ, Roueche JR. (1986) Changes in perspectives of disability among patients, staff and relatives during rehabilitation of brain injury. *Rehabilitation Psychology*, 31: 217-229.

Fleming, J. M., Strong, J., & Ashton, R. (1998). Cluster analysis of self-awareness levels in adults with traumatic brain injury and relationship to outcome. *Journal of Head Trauma Rehabilitation*, 13, 39-51.

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Sherer M, Hart T, Nick TG (2003). Measurement of impaired self-awareness after traumatic brain injury: a comparison of the patient competency rating scale and the awareness questionnaire. *Brain Injury*, 17(1):25-37.

Instrument name: Patient Health Questionnaire (PHQ-9)					
Reviewer: Erin Donnelly, PT, MS, NCS				Date of review: 6/20/12	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input checked="" type="checkbox"/> Other: Depression		<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:		<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Patient Health Questionnaire					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED			X		This tool may be beneficial for screening for depression, but time constraints may not allow for this focus.
In-Patient Rehab		X			May be helpful as a screen for depression, although PT must report results to Psychiatry and/or Medical team for interpretation.
Outpatient (including Day rehab, Transitional living)		X			

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LTAC/SNF		X				This tool may be of assistance in this setting, where all patients do not receive all services. Results may assist in referral to appropriate services.
Home Health		X				
Overall Comments:	Studies are available that target the TBI population specifically (Fann, et al. 2005, Cook, et al. 2011). These studies demonstrated good/excellent reliability and validity. However, in the first study all patients participating were oriented. Cognitive function should be taken into account, especially in the acute stage of injury. Screening results from PHQ-9 must be reported to a physician qualified to diagnose depressive disorders and to make appropriate referrals for psychological/psychiatric care.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	A person's ambulatory status will not have any effect on the ability to administer this measure.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	It would be beneficial for PT Students to understand the effects of depression on their patients' outcomes, and the prevalence of depression following TBI. Exposure would be beneficial	
		X	X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				This measure is a screening tool and would be useful in studies that address the role of depression post TBI.	

Additional information on this measure can be found at www.rehabmeasures.org: [Patient Health Questionnaire](#)

<http://steppingup.washington.edu/keys/documents/phq-9.pdf>

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Instrument name: Pittsburgh Rehabilitation Participation Scale (PRPS)					
Reviewer: Anna de Joya, PT, MS, NCS				Date of review: 06.18.2012	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity	Participation			
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:	<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input checked="" type="checkbox"/> Other: participation in therapy sessions			
Link to rehabmeasures.org summary: Pittsburgh Rehabilitation Participation Scale					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab				X	
Outpatient (including Day rehab, Transitional living)				X	
LTAC/SNF				X	

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Home Health					X	
Overall Comments:	<ul style="list-style-type: none"> • Studies have focused on mostly the in-patient rehabilitation setting, one study thus far, in the SNF setting. • Good clinical utility in the stroke population, none of the studies included participants with TBI • Acceptable psychometric properties for other diagnostic groups (ie, stroke), however only assesses participation in therapy • May provide prognostic information about the outcome of therapy, rehabilitation outcomes and length of stay, but not related to the participation of the individual in important life roles. 					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO		
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?			X		It does not assess different elements of participation and is not related to important life roles.	
Additional information on this measure can be found at www.rehabmeasures.org : Pittsburgh Rehabilitation Participation Scale						

References

Lenze, E. J., Munin, M. C., et al. (2004). "The Pittsburgh Rehabilitation Participation Scale: reliability and validity of a clinician-rated measure of participation in acute rehabilitation." Archives of physical medicine and rehabilitation 85(3): 380-384. [Find it on PubMed](#)

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Lenze EJ, Munin MC, Quear T, Dew MA, Rogers JC, Begley AE, Reynolds CF III. (2004). Significance of poor patient participation in physical and occupational therapy for functional outcome and length of stay. *Arch Phys Med Rehabil*, 85:1599-601.

Paolucci s, Di Vita A, Massicci R, Trallesi M, Bureca I, Matano A, Iosa M, Guariglia C. (2012) "Impact of participation on rehabilitation results: a multivariate study." *Eur J Phys Rehabil Med* (48) 1-1

Instrument name: Quality of Life after Brain Injury (QOLIBRI)					
Reviewer: Anna de Joya, PT, MS, NCS				Date of review: 09.07.2012	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure /function <input type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input checked="" type="checkbox"/> Community function <input type="checkbox"/> Driving <input checked="" type="checkbox"/> Health and wellness <input checked="" type="checkbox"/> Home management <input checked="" type="checkbox"/> Leisure/Recreational activities <input checked="" type="checkbox"/> Life satisfaction <input checked="" type="checkbox"/> Quality of life <input checked="" type="checkbox"/> Reintegration to community <input checked="" type="checkbox"/> Role function <input type="checkbox"/> Shopping <input checked="" type="checkbox"/> Social function <input checked="" type="checkbox"/> Work <input checked="" type="checkbox"/> Other: Subjective Health Related QOL (Cognition, Emotions, Education, Social relationships, Sexual Relationships, Pain)	
Link to rehabmeasures.org summary: Quality of Life after Brain Injury					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab		X			
Outpatient (including		X			

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Day rehab, Transitional living)						
LTAC/SNF			X			
Home Health		X				
Overall Comments:	<ul style="list-style-type: none"> • Easy to administer, can be completed in a short amount of time and no proprietary considerations • Scoring is not complicated • Self-administration is recommended if the respondent has sufficient ability; otherwise, observer assistance can be used 					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Insufficient data in TBI population to recommend required learning in entry-level curriculum, however, suggest exposure to tool as a participation measure given its good psychometric properties and clinical utility in available TBI studies.	
		X	X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				While there is insufficient data in TBI population at this time, the good psychometric properties and clinical utility can provide information about perceived health-related	

			quality of life in TBI research studies.
Additional information on this measure can be found at www.rehabmeasures.org : Quality of Life after Brain Injury			

References

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Instrument name: Quebec User Evaluation of Satisfaction with Assistive Technology (QUEST)					
Reviewer: Sue Saliga, PT, DHSc, CEEAA				Date of review: 8/30/2012	
ICF domain (check all that apply): ___ Body structure/function ___ Activity ___ Participation <u>X</u> Environment: (Assistive Equipment)					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
___ Aerobic capacity/endurance ___ Ataxia ___ Cardiovascular/pulmonary status ___ Cognition ___ Coordination (non-equilibrium) ___ Dizziness ___ Dual Tasks ___ Fatigue ___ Flexibility ___ Muscle performance ___ Muscle tone / spasticity ___ Pain ___ Sensory integration ___ Somatosensation ___ Other:	___ Balance/falls ___ Bed mobility ___ Gait (include stairs) ___ High Level mobility ___ Transfers ___ Wheelchair skills ___ Other:			___ Community function ___ Driving ___ Health and wellness ___ Home management ___ Leisure/Recreational activities ___ Life satisfaction ___ Quality of life ___ Reintegration to community ___ Role function ___ Shopping ___ Social function ___ Work ___ Other:	
Link to rehabmeasures.org summary: Quebec User Evaluation of Satisfaction with Assistive Technology					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab				X	
Outpatient (including Day rehab, Transitional living)			X		
LTAC/SNF			X		

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Home Health			X			
Overall Comments:	<ul style="list-style-type: none"> • No literature specifically assessing TBI population. • Available for use without any proprietary considerations. • Easy to administer, can be completed in a reasonable amount of time • Can be applied to a wide variety of assistive devices 					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	<ul style="list-style-type: none"> • Not appropriate for individuals with severe cognitive impairment 					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO		
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?			X		Adequate reliability for some populations however none for TBI, some norms established in other diagnoses. Further research recommended to further assess the psychometric properties of this measure, particularly in the TBI population.	
Additional information on this measure can be found at www.rehabmeasures.org : Quebec User Evaluation of Satisfaction with Assistive Technology						

References

Demers, L., Ska, B., et al. (1999). "Stability and reproducibility of the Quebec User Evaluation of Satisfaction with assistive Technology (QUEST)." *Journal of Rehabilitation Outcomes Measurement* 3(4): 42-52.

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Demers, L., Weiss-Lambrou, R., et al. (1996). "Development of the Quebec User Evaluation of Satisfaction with assistive Technology (QUEST)." *Assist Technol* 8(1): 3-13. [Find it on PubMed](#)

Demers, L., Weiss-Lambrou, R., Ska, B. (2000). "Item analysis of the Quebec user evaluation of Satisfaction with assistive technology (QUEST)." *Asst Technol* 12:96-105

Karmarkar, A. M., Collins, D. M., et al. (2009). "Satisfaction related to wheelchair use in older adults in both nursing homes and community dwelling." *Disabil Rehabil Assist Technol* 4(5): 337-343. [Find it on PubMed](#)

Instrument name: Rancho Los Amigos Levels of Cognitive Function					
Reviewer: Karen McCulloch, PT, PhD, NCS				Date of review: 5/30/12	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input checked="" type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:		<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:		<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Rancho's Levels of Cognitive Functioning					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED		X			May assist with recommendations for level of care required following discharge.
In-Patient Rehab		X			While useful, other more specific tools should also be considered for PT.
Outpatient (including Day rehab, Transitional		X			

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living)						
LTAC/SNF		X				
Home Health		X				
Overall Comments:	Most useful in first year following injury and to describe the general level of the patient. Each level of care necessitates other scales in addition to this general scale to describe patient function.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	As patients progress toward independence, may not be as useful.
II-Mild dependence					X	Usefulness will depend on patients' current level and behavioral status
III-Moderate dependence					X	As above
IV-Severe dependence					X	Likely to be appropriate for lower level patients.
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	These levels of cognitive function are most useful early on in recovery when a global rating may be feasible as a clinical descriptor. As patients progress beyond the first year of recovery the value of these levels is reduced.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	The use of cognitive levels continue to be common clinically. Students should be able to use this scale and understand the presentation of a patient at each level.	
	X		X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				Other tools may provide finer gradation of recovery, but as a general descriptor of patient status, may be useful.	
Additional information on this measure can be found at www.rehabmeasures.org : Ranchos Levels of Cognitive Functioning						

References

Cifu DX, Keyser-Marcus L, Lopez E, Wehman P, Kreutzer JS, Englander J, High W. (1997). Acute predictors of successful return to work 1 year after traumatic brain injury: a multicenter analysis. *Arch Phys Med Rehabil* 78:125-131. **More information is available from PubMed at this link, PMID: [9041891](#)**

Finch M, Sandel ME, Spettell C, Mack A, Spivack G. (1997). Admission examination factors predicting cognitive improvement during acute brain injury rehabilitation. *Brain Injury* 11:713-721. **More information is available from PubMed at this link, PMID: [9354247](#)**

Gouvier WD, Blanton PD, LaPorte KK, Nepomuceno C. (1987). Reliability and validity of the disability rating scale and the levels of cognitive functioning scale in monitoring recovery from severe head injury. *Arch Phys Med Rehabil* 68:94-97. **More information is available from PubMed at this link, PMID: [3813863](#)**

Hall KM, Hamilton B, Gordon WA, Zasler ND: Characteristics and comparisons of functional assessment indices: disability rating scale, functional independence measure and functional assessment measure. *J Head Trauma Rehabil* 1993;8(2):60-74.

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Labi ML, Brentjens M, Shaffer K, Weiss C, Zielenzny MA. Functional Cognition Index: A new instrument to assess cognitive disability after brain injury. *J Neuro Rehabil* 1998; 12:45-52.

Mysiw WJ, Corrigan JD, Hunt M, Cavin D, Fish T. (1989). Vocational evaluation of traumatic brain injury patients using the functional assessment inventory. *Brain Injury* 3:27-34. **More information is available from PubMed at this link, PMID: [2924036](#)**

Rao N, Kilgore KM. (1992). Predicting return to work in traumatic brain injury using assessment scales. *Arch Phys Med Rehabil* 73:911-916. **More information is available from PubMed at this link, PMID: [1417465](#)**

Instrument name: Reintegration to Normal Life Index (RNLI)					
Reviewer: Anna de Joya, MS, NCS				Date of review: 06.18.2012	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:		<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:		<input checked="" type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input checked="" type="checkbox"/> Leisure/Recreational activities <input checked="" type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input checked="" type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input checked="" type="checkbox"/> Social function <input checked="" type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Reintegration to Normal Living Index (RNL)					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab				X	
Outpatient (including Day rehab, Transitional living)			X		
LTAC/SNF				X	
Home Health			X		

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Overall Comments:	<ul style="list-style-type: none"> • Easy to administer, can be completed in a short amount of time and no proprietary considerations. • Items are more related to roles and participation in the outpatient or home settings. • Requires cognitive skills to self-evaluate 					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	This tool has not been extensively studied/used in the TBI population.	
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?			X		This tool has not been extensively studied/used in the TBI population. Further research to validate the tool in the TBI population is recommended.	
Additional information on this measure can be found at www.rehabmeasures.org : Reintegration to Normal Living Index (RNL)						

References

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Friedland JF, Dawson DR. (2001). Function after motor vehicle accidents: a prospective study of mild head injury and posttraumatic stress. *J Nerv Ment Dis.* 189(7):426-34.

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Trombly, C. A., Radomski, M. V., & Davis, E. S. (1998). Achievement of self-identified goals by adults with traumatic brain injury: Phase I. *AJOT*, 52, 810–818.

Instrument name: Rivermead Mobility Index					
Reviewer: Irene Ward, PT, DPT, NCS				Date of review: May 25, 2012	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other: trunk control	<input type="checkbox"/> Balance/falls <input checked="" type="checkbox"/> Bed mobility <input checked="" type="checkbox"/> Gait (include stairs) <input checked="" type="checkbox"/> High Level mobility <input checked="" type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input checked="" type="checkbox"/> Other: running and bathing			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Rivermead Mobility Index					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	Not recommended for this setting. Higher level items on the test examine skills that will not be assessed in a hospital setting such as walking outside, walking over uneven surfaces or running.
In-Patient Rehab			X		Very limited use in TBI population. Psychometrics data for TBI limited.

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						More used in stroke population.
Outpatient (including Day rehab, Transitional living)			X			
LTAC/SNF			X			
Home Health			X			
Overall Comments:	<p>uals with TBI, but shown to have excellent psychometric data in stroke</p> <p>Requires approximately 5 minutes to administer and conducted as a survey requiring a stop watch for observation of skill performance.</p>					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	<p>Since this is a survey, consideration of an individual's ambulation status is not required for proper administration. However, there are several items on this survey that relate to high-level ambulation.</p> <p>Not appropriate for patients with disorder of consciousness.</p> <p>Since this is a survey of self-reported items, the patient should have the ability to answer the questions (intact language, cognition, self-awareness of deficits).</p> <p>One item on the test, standing for 10 seconds without an aid, requires direct observation from the tester.</p>					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Not validated in TBI population.	
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?			X		Not validated in TBI population.	
Additional information on this measure can be found at www.rehabmeasures.org : Rivermead Mobility Index						

References

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Scivoletto G, Laurenza L, Mammone A, Foti C, Molinari M. (2011). [Recovery following ischemic myelopathies and traumatic spinal cord lesions](#). Spinal Cord. Aug;49(8):897-902. doi: 10.1038/sc.2011.31. Epub 2011 Apr 5.

Sommerfeld, D. K. and von Arbin, M. H. (2001). "Disability test 10 days after acute stroke to predict early discharge home in patients 65 years and older." Clinical Rehabilitation 15(5): 528-534. [Find it on PubMed](#)

Instrument name: Satisfaction With Life Scale (SWLS)					
Reviewer: Anna de Joya, PT, MS, NCS				Date of review: 06.18.2012	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:		<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:		<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input checked="" type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Satisfaction with Life Scale (SWLS, Deiner Scale)					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab				X	
Outpatient (including Day rehab, Transitional living)			X		
LTAC/SNF				X	
Home Health			X		
Overall Comments:	<ul style="list-style-type: none"> • Easy to administer, can be completed in a short amount of time and no 				

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	<p>proprietary considerations.</p> <ul style="list-style-type: none"> No training is required except to read a manual. Items are more applicable to satisfaction with life roles upon discharge from the acute care and in-patient rehab or SNF settings. Alternative phrasing to characterize pre-trauma life satisfaction may be more appropriate for hospital settings, however, this has not been validated. Can be completed by interview (including phone interview) or paper-pencil Response Proxy-report not recommended. 					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Insufficient data in TBI population to recommend required learning in entry-level curriculum, however, suggest exposure to tool as a participation measure given its good psychometric properties and clinical utility in available TBI studies and other populations.	
		X	X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				It is recommended for use as a core outcome measure in TBI research by the Common Data Elements TBI Outcomes	

			Workgroup
Additional information on this measure can be found at www.rehabmeasures.org : Satisfaction with Life Scale (SWLS, Deiner Scale)			

References

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Instrument name: Sensory Organization Test (SOT)					
Reviewer: Heidi Roth PT, DHS, NCS				Date of review: 6/18/12	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:	<input checked="" type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Sensory Organization Test					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab				X	
Outpatient (including Day rehab, Transitional living)			X		
LTAC/SNF				X	
Home Health				X	
Overall Comments:	Limited clinical utility (expensive testing equipment), insufficient evidence in				

	target population.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence			X			Requires individual be able to follow 1-2 step commands.
II-Mild dependence			X			Requires individual be able to follow 1-2 step commands.
III-Moderate dependence			X			Requires individual be able to follow 1-2 step commands.
IV-Severe dependence				X		Requires individual be able to stand independently; Requires individual be able to follow 1-2 step commands.
*Not applicable: Outcome measure not related to ambulation status, insufficient evidence in target population						
Overall Comments:	Requires expensive testing equipment					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO		
		X	X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X					
Additional information on this measure can be found at www.rehabmeasures.org : Sensory Organization Test						

References

Bernhardt, J., Ellis, P., et al. (1998). "Changes in balance and locomotion measures during rehabilitation following stroke." *Physiother Res Int* 3(2): 109-122. [Find it on PubMed](#)

Broglio, S. P., Sosnoff J. A., et al. (2009). "The relationship of athlete-reported concussion symptoms and objective measures of neurocognitive function and postural control." *Clin J Sport Med* 19(5): 377-382.

Cohen, H., Blatchly, C. A., et al. (1993). "A study of the clinical test of sensory interaction and balance." *Phys Ther* 73(6): 346-351; discussion 351-344. [Find it on PubMed](#)

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Guskiewicz, K.M., Ross, S.E., Marshall, S. W. (2001). "Postural stability and neuropsychological deficits after concussion in collegiate athletes." *Journal of Athletic Training* 36(3):263-273.

Kaufman, K. R., Brey, R. H., et al. (2006). "Comparison of subjective and objective measurements of balance disorders following traumatic brain injury." *Medical Engineering & Physics* 28:234-239.

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Whitney, S. and Wrisley, D. (2004). "The influence of footwear on timed balance scores of the modified clinical test of sensory interaction and balance." *Archives of physical medicine and rehabilitation* 85(3): 439-443. [Find it on PubMed](#)

Wrisley, D. and Whitney, S. (2004). "The effect of foot position on the modified clinical test of sensory interaction and balance." *Archives of physical medicine and rehabilitation* 85(2): 335-338. [Find it on PubMed](#)

Instrument name: Sensory Stimulation Assessment Measure (SSAM)					
Reviewer: Erin Donnelly, PT, MS, NCS				Date of review: 9/4/12	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input checked="" type="checkbox"/> Sensory integration <input checked="" type="checkbox"/> Somatosensation <input type="checkbox"/> Other: Consciousness, response to sensory stimuli	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Sensory Stimulation Assessment Measure					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	This exam's clinical utility (time and equipment required) limit its use by PTs in the acute care setting.
In-Patient Rehab			X		Clinical utility is appropriate for this setting.
Outpatient (including Day rehab, Transitional				X	Patients with disorders of consciousness are typically not

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living)						treated in this setting.
LTAC/SNF			X			This tool is appropriate for use in these settings.
Home Health			X			
Overall Comments:	The SSAM was reviewed by the American Congress of Rehabilitation (Seel et al, 2010). The expert panel concluded that the SSAM has acceptable content validity, and well-defined administration and scoring procedures that facilitate consistent use. Overall, they recommend that the SSAM may be used to assess DOC with moderate reservations related to the possibility of examiner bias in reliability studies. The validity of the SSAM has been studied a limited amount.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	This scale is recommended for individuals that are presenting in a Disorder of Consciousness (Vegetative or Minimally Conscious State). Therefore, ambulatory status is not applicable.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Other tools for disorders of consciousness have better psychometrics.	
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?			X		Further research is needed to validate the SSAM.	
Additional information on this measure can be found at www.rehabmeasures.org : Sensory Stimulation Assessment Measure						

References

Davis, A. E., & Gimenez, A. (2003). Cognitive-behavioral recovery in comatose patients following auditory sensory stimulation. *J Neuroscience Nursing*, 35(4), 202-209, 214.

Rader, M. A., & Ellis, D. W. (1994). The Sensory Stimulation Assessment Measure (SSAM): a tool for early evaluation of severely brain-injured patients. *Brain Injury*, 8(4), 309-321.

Seel, R. T., Sherer, M., Whyte, J., Katz, D. I., et al. (2010). Assessment scales for disorders of consciousness: evidence-based recommendations for clinical practice and research. *Arch Phys Med Rehabil*, 91(12), 1795-1813.

Instrument name: Sickness Impact Profile – 68 (SIP-68)					
Reviewer: Sue Saliga, PT, DSHc, CEEAA				Date of review: 9/23/2012	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other: Alertness	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input checked="" type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input checked="" type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input checked="" type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input checked="" type="checkbox"/> Other: Dressing, Social interaction, communication, emotional behavior	
Link to rehabmeasures.org summary: Sickness Impact Profile					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab				X	
Outpatient (including Day rehab, Transitional living)			X		Available study (Van Baalen, 2006) assessed patients from inpatient rehab DC to one year post-injury
LTAC/SNF				X	
Home Health			X		Available study (Van Baalen, 2006)

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						assessed patients from inpatient rehab DC to one year post-injury
Overall Comments:	The evidence on the psychometric properties of the SIP 68 for a TBI population is limited and more research is needed to assess psychometrics.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Little research on TBI to support instruction of use in entry-level curriculum	
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?			X		Limited research for the TBI population	
Additional information on this measure can be found at www.rehabmeasures.org : Sickness Impact Profile						

References

Levine B, Dawson D, Boutet I, Schwartz M, Stuss DT. (2000). "Assessment of strategic self-regulation in traumatic brain injury: Its relationship to injury severity and psychosocial outcome. *Neuropsychology*(14):491-500

Temkin, N. R., Dikmen, S., et al. (1989). "General versus disease-specific measures. Further work on the Sickness Impact Profile for head injury." *Med Care* 27(3 Suppl): S44-53. [Find it on PubMed](#)

van Baalen, B., Odding, E., et al. (2006). "Reliability and sensitivity to change of measurement instruments used in a traumatic brain injury population." *Clin Rehabil* 20(8): 686-700. [Find it on PubMed](#)

Instrument name: Supervision Rating Scale					
Reviewer: Karen McCulloch, PT, PhD, NCS				Date of review: 6/13/12	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input checked="" type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input checked="" type="checkbox"/> Other: Ability to live independently in community	
Link to rehabmeasures.org summary: Supervision Rating Scale					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab				X	
Outpatient (including Day rehab, Transitional living)				X	
LTAC/SNF				X	
Home Health				X	
Overall Comments:	Study of this measure is limited, with a single sample of individuals living in				

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	the community years after injury. While the descriptions and categories could prove useful to describe patients who are in institutional settings or require particular levels of supervision, its validation in those populations has not been tested.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Not necessary for entry-level education, rather more specialized practice.	
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?			X		May be useful to describe living supervision levels if a caregiver is available as informant, but more study is necessary.	
Additional information on this measure can be found at www.rehabmeasures.org: Supervision Rating Scale						

References

Boake C. Supervision rating scale: a measure of functional outcome from brain injury. Arch Phys Med Rehabil 1996; 77: 764-72.

Instrument name: Sydney Psychosocial Reintegration Scale (SPRS)					
Reviewer: Anna de Joya, PT, MS, NCS				Date of review: 06.18.2012	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input checked="" type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input checked="" type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Sydney Psychosocial Reintegration Scale					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab				X	
Outpatient (including Day rehab, Transitional living)		X			
LTAC/SNF				X	
Home Health		X			
Overall Comments:	<ul style="list-style-type: none"> Easy to administer, can be completed in a short amount of time and no proprietary considerations. 				

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	<ul style="list-style-type: none"> Items are related to roles and participation in the outpatient and home settings. Robust psychometric properties in the TBI population. 					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	With this tool being one of the participation measures that are validated in individuals with TBI and being psychometrically robust, students should be exposed to this tool.	
		X	X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				Good psychometric properties validated in the TBI population.	
Additional information on this measure can be found at www.rehabmeasures.org : Sydney Psychosocial Reintegration Scale						

References

Draper, K., Ponsford, J., & Schonberger, M. (2007). Psychosocial and emotional outcomes 10 years following traumatic brain injury. *J Head Trauma Rehabil*, 22(5), 278-287.

Kuipers P, Kendall M, Fleming J, Tate R. Comparison of the Sydney Psychosocial Reintegration Scale (SPRS) with the Community Integration Questionnaire (CIQ): psychometric properties. (2004). *Brain Inj*. 18(2):161-77.

Tate, R., Hodgkinson, A., Veerabangsa, A., & Maggiotto, S. (1999). Measuring psychosocial recovery after traumatic brain injury: Psychometric properties of a new scale. *Journal of Head Trauma Rehabilitation, 14*, 543–557.

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Tate, R., Simpson, G., Lane-Brown, A., Soo, C., de Wolf, A., & Whiting, D. (2012). Sydney Psychosocial Reintegration Scale (SPRS-2): Meeting the Challenge of Measuring Participation in Neurological Conditions. *Australian Psychologist, 47*(1), 20-32.

Instrument name: Timed Up and Go (TUG)					
Reviewer: Irene Ward, PT, DPT, NCS				Date of review: May 25, 2012	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:		<input checked="" type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:		<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Timed Up and Go Test (TUG)					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED			X		
In-Patient Rehab			X		
Outpatient (including Day rehab, Transitional living)			X		
LTAC/SNF			X		
Home Health			X		
Overall Comments:	Not tested in individuals with TBI, but shown to have adequate to excellent				

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	psychometric data in other populations. Excellent clinical utility. Requires less than 3 minutes and minimal equipment (chair with arms, stop watch, tape measure) to administer.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence			X			
II-Mild dependence			X			
III-Moderate dependence				X		Not appropriate for patients requiring continuous manual assistance
IV-Severe dependence				X		Not appropriate if the patient is non-ambulatory or requires more than one person to assist with ambulation
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	<p>Not appropriate for patients with a disorder of consciousness. Patient needs to be ambulatory. No physical assistance is given during the test. Patient wears their regular footwear and is permitted to use an assistive device. Not recommended to use with individuals with cognitive impairments. Reliability of the measure decreases when administered to individuals with cognitive impairments.</p>					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Not validated in TBI population	
		X	X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?			X		Not validated in TBI population and may not be reliable when administered to individuals with cognitive impairments.	
Additional information on this measure can be found at www.rehabmeasures.org: Timed Up and Go Test (TUG)						

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Instrument name: Timed Up and Go _(Cognitive)					
Reviewer: Irene Ward, PT, DPT, NCS				Date of review: June 10, 2012	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body function/structure <input checked="" type="checkbox"/> Activity _____ Participation					
Construct/s measured (check all that apply):					
Body structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input checked="" type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:		<input checked="" type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:		<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Timed Up and Go-Cognitive					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED			X		Not tested in patients with acute TBI, but shown to have excellent psychometric data for healthy older adults living in the community.
In-Patient Rehab			X		Not tested in patients with acute TBI, but shown to have excellent psychometric data for healthy older adults living in the community.

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Outpatient (including Day rehab, Transitional living)			X			Not tested in patients with TBI, but shown to have excellent psychometric data for healthy older adults living in the community.
LTAC/SNF			X			Not tested in patients with TBI, but shown to have excellent psychometric data for healthy older adults living in the community.
Home Health			X			Not tested in patients with TBI, but shown to have excellent psychometric data for healthy older adults living in the community.
Overall Comments:	Rockwood et al (2000) reports poor test-retest reliability in older adults with cognitive impairments.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence			X			Not tested in patients with TBI.
II-Mild dependence			X			Not tested in patients with TBI.
III-Moderate dependence				X		Not tested in patients with TBI. Individuals are permitted to use an assistive device for ambulation, but without the assistance of another person.
IV-Severe dependence				X		Not tested in patients with TBI. Patients must be ambulatory.
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	This test may not be appropriate for individuals who are not able to follow simple commands. Rockwood et al (2000) reports poor test-retest reliability in older adults with cognitive impairments. Not appropriate for individuals with a severe disorder of consciousness.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Although the TUG _(cognitive) has been shown to have excellent psychometric data in the healthy elderly population, it has not been tested in	
		X	X			

Research Use	YES	NO	Comments
Is this tool appropriate for use in intervention research studies?		X	individuals with TBI. Although the TUG _(cognitive) has been shown to have excellent psychometric data in the healthy elderly population, it has not been tested in individuals with TBI. Recommend future studies to explore the psychometrics of the TUG _(cognitive) in individuals with TBI.
Additional information on this measure can be found at www.rehabmeasures.org : Timed Up and Go-Cognitive			

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Rockwood K., Awalt E., Carver D., MacKnight C. (2000). Feasibility and measurement properties of the Functional Reach and Timed Up and Go tests in the Canadian study of Health and Aging. *Journal of Gerontology*. 55A(2):M70-M73.

Shumway-Cook A., Brauer S., Woollacott M. (2000). Predicting the probability for falls in community-dwelling older adults using the Timed-Up and Go test. *Physical Therapy* 80:896-903.

Instrument name: Tinetti Falls Efficacy Scale					
Reviewer: Sue Saliga, PT, DHSc, CEEAA				Date of review: 9/19/2012	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:	<input type="checkbox"/> Balance/falls <input checked="" type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input checked="" type="checkbox"/> High Level mobility <input checked="" type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input checked="" type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Tinetti Falls Efficacy Scale					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab			X		Good clinical and psychometric properties in the stroke population, specifically in this setting; reasonable to use in the TBI population
Outpatient (including Day rehab, Transitional)			X		One study assessed on community dwelling individuals with TBI

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living)						
LTAC/SNF					X	
Home Health			X			For more mobile home care patients, this may be appropriate
Overall Comments:	Very little literature with the TBI population however may be more appropriate for other populations					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	Has been used in population with TBI using an assistive device to ambulate					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Little literature for the population with TBI does not support current instruction to students for this population	
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?			X		Not recommended for TBI population, more research is needed about its usefulness	
Additional information on this measure can be found at www.rehabmeasures.org : Tinetti Falls Efficacy Scale						

References

Medley, A., Thompson, M., French, J. (2006). Predicting the probability of falls in community dwelling persons with brain injury: a pilot study. *Brain Injury* .20:13-14, 1403-14

Instrument name: Trunk Control Test (TCT)					
Reviewer: Irene Ward, PT, DPT, NCS				Date of review: June 10, 2012	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure /function <input checked="" type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input checked="" type="checkbox"/> Other: trunk control	<input checked="" type="checkbox"/> Balance/falls (sitting) <input checked="" type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Trunk Control Test					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED			X		Not tested in individuals with TBI, but shown to have adequate to excellent psychometric data for individuals with stroke.
In-Patient Rehab			X		Not tested in individuals with TBI, but shown to have adequate to excellent psychometric data for individuals with stroke.

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Outpatient (including Day rehab, Transitional living)			X			Not tested in individuals with TBI, but shown to have adequate to excellent psychometric data for individuals with stroke.
LTAC/SNF			X			Not tested in individuals with TBI, but shown to have adequate to excellent psychometric data for individuals with stroke.
Home Health			X			Not tested in individuals with TBI, but shown to have adequate to excellent psychometric data for individuals with stroke.
Overall Comments:	The exam may be administered in less than 5 minutes and requires equipment that may be easily found in a variety of setting: a bed or treatment table without back or arm support, stop watch and score sheet.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	The patient's inability to ambulate will not restrict the use of this test. This measure has been tested on both ambulatory and non-ambulatory individuals with stroke. Not appropriate for individuals with a severe disorder of consciousness. Must be able to follow simple 1 step directions.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Psychometric data has not been identified for this measure in individuals with TBI. Recommend that students be exposed to the measure as a possibility for use in this population.	
		X	X			

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Research Use	YES	NO	Comments
Is this tool appropriate for use in intervention research studies?		X	Psychometric data has not been identified for this measure in individuals with TBI.
Additional information on this measure can be found at www.rehabmeasures.org : Trunk Control Test			

References

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- Farrriols C. Bajo L., Muniesa J., Escalada F., Miralles R. (2009) Functional decline after prolonged bed rest following acute illness in elderly patients: is trunk control test (TCT) a predictor of recovering ambulation? *Archives of Gerontology and Geriatrics*. 49:409-412.
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- Verheyden G., Nieuwboer A., Van de Winckel A., De Weerd W. (2007). Clinical tools to measure trunk performance after stroke: a systematic review of the literature. *Clinical Rehabilitation*. 27:387-394.

Instrument name: Trunk Impairment Scale (TIS)					
Reviewer: Irene Ward, PT, DPT, NCS				Date of review: June 10, 2012	
ICF domain (check all that apply):					
<input type="checkbox"/> X <input type="checkbox"/> Body structure /function <input checked="" type="checkbox"/> X <input type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input checked="" type="checkbox"/> X Other: trunk control	<input checked="" type="checkbox"/> X Balance/falls <input checked="" type="checkbox"/> X Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Trunk Impairment Scale					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED			X		Not tested in individuals with TBI, but shown to have adequate to excellent psychometric data for individuals with stroke.
In-Patient Rehab			X		Not tested in individuals with TBI, but shown to have adequate to excellent psychometric data for individuals with stroke.
Outpatient (including			X		Not tested in individuals with TBI,

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Day rehab, Transitional living)						but shown to have adequate to excellent psychometric data for individuals with stroke.
LTAC/SNF			X			Not tested in individuals with TBI, but shown to have adequate to excellent psychometric data for individuals with stroke.
Home Health			X			Not tested in individuals with TBI, but shown to have adequate to excellent psychometric data for individuals with stroke.
Overall Comments:	The exam may be administered in less than 20 minutes and requires equipment that may be easily found in a variety of setting: a bed or treatment table without back or arm support, stop watch and score sheet.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	The patient's inability to ambulate will not restrict the use of this test. This measure has been tested on both ambulatory and non-ambulatory individuals with stroke. Instructions are provided verbally, but could be demonstrated. Individuals tested were able to follow-simple commands. Not appropriate for individuals with a severe disorder of consciousness.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Psychometric data has not been identified for this measure in individuals with TBI. Recommend that students be exposed to the measure as a possibility for use in this population.	
		X	X			
Research Use	YES		NO		Comments	
Is this tool appropriate			X		Psychometric data has	

<p>for use in intervention research studies?</p>			<p>not been identified for this measure in individuals with TBI. For the stroke population the TIS has sufficient reliability, internal consistency and validity for use in clinical practice and stroke research (Verheyden et al. , 2004).</p>
<p>Additional information on this measure can be found at www.rehabmeasures.org : Trunk Impairment Scale</p>			

References

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Fujiwara T., Liu M., Tsuji T., Sonoda S., Mizumo K., Akaboshi K., Hase K., Masakado Y., Chino N. (2004). Development of a new measure to assess trunk impairment after stroke (Trunk Impairment Scale). *Am J Phys Med Rehabil*. 83:681-688.

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Verheyden G., Vereeck L., Truijen S., Troch M., Herregodts I., Lafosse C., Nieuwboer A., De Weerd W. (2006). Trunk performance after stroke and the relationship with balance, gait and functional ability. *Clinical Rehabilitation*. 20: 451-458.

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Instrument name: Walking and Remembering Test (WART)					
Reviewer: Karen McCulloch, PT, PhD, NCS				Date of review: 10/31/12	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input checked="" type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:	<input checked="" type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input checked="" type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input checked="" type="checkbox"/> Other: dual-task performance			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Walking and Remembering Test					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab				X	
Outpatient (including Day rehab, Transitional living)			X		
LTAC/SNF				X	
Home Health				X	
Overall Comments:	This measure has not been sufficiently tested in TBI to warrant higher				

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	recommendation, although a single study with chronic TBI for those who are able to ambulate independently suggests that it is feasible for individuals with cognitive impairment to perform. The lack of guidance for interpretation is a drawback.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence			X			Individuals with independent ambulation skills may benefit from additional testing to challenge dual task performance.
II-Mild dependence				X		
III-Moderate dependence				X		
IV-Severe dependence				X		
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Not necessary for entry-level education, rather more specialized practice.	
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				More appropriate as a research tool given the time required to complete testing, the tool has not been extensively studied/used in the TBI population. Further research to validate the tool in the TBI population is recommended.	
Additional information on this measure can be found at www.rehabmeasures.org : Walking and Remembering Test						

References

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McCulloch, KL, Mercer V, Giuliani C, Marshall S. (2009). Development of a clinical measure of dual-task performance in walking: reliability and preliminary validity of the Walking and Remembering Test. *Journal of Geriatric Physical Therapy.* 32 (1): 2-9.

Instrument name: Walking While Talking Test (WWTT)					
Reviewer: Irene Ward, PT, DPT, NCS				Date of review: 8/1/2012	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other: trunk control		<input checked="" type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input checked="" type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input checked="" type="checkbox"/> Other: dual task		<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Walking While Talking					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED			X		
In-Patient Rehab			X		
Outpatient (including Day rehab, Transitional living)			X		
LTAC/SNF			X		
Home Health			X		

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Overall Comments:	This measure was primarily used in the geriatric, non-demented, population . Good reliability. The sensitivity and specificity of predicting falls improves in WWT-simple by using additional balance measures such as the Tinetti Balance and Mobility Scale.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence			X			
II-Mild dependence			X			
III-Moderate dependence				X		
IV-Severe dependence				X		
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	This measure was primarily used in the geriatric, non-demented, population. This measure may not be appropriate for individuals with cognitive deficits limiting their ability to follow multi-step commands. Patients need to be able to ambulate without additional physical assistance, but could use an ambulatory aide to perform the test.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Not extensively tested in individuals with TBI. Other tests developed based on this concept and related to dual task costs (DTCs) may be appropriate.	
		X	X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?			X		Not extensively tested in individuals with TBI. Other tests developed based on this concept and related to dual task costs (DTCs) may be appropriate.	
Additional information on this measure can be found at www.rehabmeasures.org: Walking While Talking						

References

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Instrument name: The Western Neuro Sensory Stimulation Profile (WNSSP)					
Reviewer: Erin Donnelly, PT, MS, NCS				Date of review: 8/1/12	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input checked="" type="checkbox"/> Somatosensation <input checked="" type="checkbox"/> Other: Responsiveness to visual, verbal, somatosensory, olfactory input.		<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:		<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Western Neuro Sensory Stimulation Profile					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	The exam takes between 20-45 minutes which is inconsistent with acute care time availability.
In-Patient Rehab			X		This test could be used, but the WNSSP was revised to create the DOCS scale, and the CRS-R has better psychometrics.

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Outpatient (including Day rehab, Transitional living)				X		Patients with disorders of consciousness are usually not seen in this setting.
LTAC/SNF			X			This exam may be beneficial in tracking patient change or the need for further services.
Home Health			X			
Overall Comments:	The WNSSP was one of the early measures developed to examine disorders of consciousness. Despite acceptable psychometrics in the brain injury population, there are other scales (CRS-R, DOCS) that have better psychometrics and stronger validity for use in current practice.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	The WNSSP is used to assess the cognitive status after severe TBI, so is not related to ambulatory status.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO		
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?			X		Other disorders of consciousness measures have stronger psychometric properties.	
Additional information on this measure can be found at www.rehabmeasures.org ; Western Neuro Sensory Stimulation Profile						

References

Ansell, B.J.; Keenan, J.E. (1989). "The Western Neuro Sensory Stimulation Profile: A tool for Assessing slow-to-recover head injured patients". Arch Phys Medicine Rehabilitation. 70: 104-108.

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Instrument name: Wheelchair Skills Test (WST) 4.1					
Reviewer: Irene Ward, PT, DPT, NCS				Date of review: June 10, 2012	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input checked="" type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function		Activity		Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:		<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input checked="" type="checkbox"/> Transfers <input checked="" type="checkbox"/> Wheelchair skills <input checked="" type="checkbox"/> Other: fall recovery, stairs, curbs		<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Wheelchair Skills Test					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab				X	
Outpatient (including Day rehab, Transitional living)				X	May be a possibility. Too little data available and none in the TBI population.
LTAC/SNF				X	
Home Health				X	
Overall Comments:	This exam requires over 20 minutes to administer and extensive equipment.				

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	Furthermore, in its current version of 4.1, only reliability data is reported for individuals who use wheelchairs in the community. The information is not specific to individuals with TBI. May be appropriate for individuals with TBI who are being seen either through home health or outpatient therapy settings, but further testing is recommended before formulating a conclusion.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	Ambulation is not required for administration of the wheelchair skills test. The test is lengthy and requires the processing of multiple commands. Not appropriate for individuals with a severe disorder of consciousness.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Psychometric data has not been identified for this measure in individuals with TBI.	
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?			X		Psychometric data has not been identified for this measure in individuals with TBI.	
Additional information on this measure can be found at www.rehabmeasures.org : Wheelchair Skills Test						

References

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Kirby R.L., Dupuis D.J., MacPhee A. H., Coolen A.L., Smith C., Best K.L., Newton A. M., Mountain A. D., MacLeod D.A., Bonaparte J.P. The wheelchair skills test (versions 2.4): measurement properties. *Arch Phys Med Rehabil.* 85:794-804.

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Instrument name: World Health Organization Quality of Life-BREF (WHOQOL-BREF)					
Reviewer: Anna de Joya, PT, MS, NCS				Date of review: 06.18.2012	
ICF domain (check all that apply):					
<input type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input checked="" type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input type="checkbox"/> Coordination (non-equilibrium) <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input type="checkbox"/> Other:	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input checked="" type="checkbox"/> Community function <input type="checkbox"/> Driving <input checked="" type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input checked="" type="checkbox"/> Leisure/Recreational activities <input checked="" type="checkbox"/> Life satisfaction <input checked="" type="checkbox"/> Quality of life <input checked="" type="checkbox"/> Reintegration to community <input checked="" type="checkbox"/> Role function <input type="checkbox"/> Shopping <input checked="" type="checkbox"/> Social function <input type="checkbox"/> Work <input checked="" type="checkbox"/> Other: Psychologic health, Social relationships, Environment	
Link to rehabmeasures.org summary: World Health Organization Quality of Life-BREF (WHOQOL-BREF)					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	
In-Patient Rehab				X	
Outpatient (including Day rehab, Transitional living)			X		
LTAC/SNF				X	
Home Health			X		

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Overall Comments:	<ul style="list-style-type: none"> • Easy to administer, can be completed in a short amount of time and no proprietary considerations. • Items are more related to roles and participation upon discharge from the acute care and in-patient rehab or SNF settings. • Learning how to perform scoring is needed, but is not complicated. • Self-administration is recommended if the respondent has sufficient ability; otherwise, interviewer assisted or interviewer-administered forms should be used. 					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:						
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Insufficient data in TBI population to recommend required learning in entry-level curriculum, however, suggest exposure to tool as a participation measure given its good psychometric properties and clinical utility in available TBI studies and other populations.	
		X	X			
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				While there is insufficient data in TBI population at this time, the good psychometric properties and clinical utility as a generic measure, can provide information about	

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			multiple dimensions of perceived health in TBI research studies.
Additional information on this measure can be found at www.rehabmeasures.org: World Health Organization Quality of Life-BREF (WHOQOL-BREF)			

References

Chiu WT, Huang SJ, Hwang HF, Tsao JY, Chen CF, Tsai SH, Lin MR. (2006). Use of the WHOQOL-BREF for evaluating persons with traumatic brain injury. *J Neurotrauma*. 11:1609-20.

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Instrument name: Wolf Motor Function (WMFT)					
Reviewer: Irene Ward, PT, DPT, NCS				Date of review: May 23, 2012	
ICF domain (check all that apply):					
<input checked="" type="checkbox"/> Body structure/function <input type="checkbox"/> Activity <input type="checkbox"/> Participation					
Construct/s measured (check all that apply):					
Body Structure and Function	Activity			Participation	
<input type="checkbox"/> Aerobic capacity/endurance <input type="checkbox"/> Ataxia <input type="checkbox"/> Cardiovascular/pulmonary status <input type="checkbox"/> Cognition <input checked="" type="checkbox"/> Coordination (non-equilibrium) stacking checkers <input type="checkbox"/> Dizziness <input type="checkbox"/> Dual Tasks <input type="checkbox"/> Fatigue <input type="checkbox"/> Flexibility <input type="checkbox"/> Muscle performance <input type="checkbox"/> Muscle tone / spasticity <input type="checkbox"/> Pain <input type="checkbox"/> Sensory integration <input type="checkbox"/> Somatosensation <input checked="" type="checkbox"/> Other: speed and strength of upper extremity, reach and retrieve	<input type="checkbox"/> Balance/falls <input type="checkbox"/> Bed mobility <input type="checkbox"/> Gait (include stairs) <input type="checkbox"/> High Level mobility <input type="checkbox"/> Transfers <input type="checkbox"/> Wheelchair skills <input type="checkbox"/> Other:			<input type="checkbox"/> Community function <input type="checkbox"/> Driving <input type="checkbox"/> Health and wellness <input type="checkbox"/> Home management <input type="checkbox"/> Leisure/Recreational activities <input type="checkbox"/> Life satisfaction <input type="checkbox"/> Quality of life <input type="checkbox"/> Reintegration to community <input type="checkbox"/> Role function <input type="checkbox"/> Shopping <input type="checkbox"/> Social function <input type="checkbox"/> Work <input type="checkbox"/> Other:	
Link to rehabmeasures.org summary: Wolf Motor Function Test					
Recommendation Categories					
Practice Setting	4	3	2	1	Comments
Acute/ED				X	Utility of this test may be limited in the ED or bedside in acute care given the length of time and equipment needed to administer the test.
In-Patient Rehab			X		
Outpatient (including Day rehab, Transitional			X		

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living)						
LTAC/SNF			X			
Home Health					X	Utility of this test may be limited in the home health environment given the length of time and equipment needed to administer the test.
Overall Comments:	Not extensively tested in the TBI population, but shown to have excellent psychometric data in stroke population. Good clinical utility, but requires equipment and approximately 30 minutes to administer the test.					
Ambulatory Status	4	3	2	1	N/A*	Comments (Include recommendations based on cognitive status)
I-Complete Independence					X	
II-Mild dependence					X	
III-Moderate dependence					X	
IV-Severe dependence					X	
*Not applicable: Outcome measure not related to ambulation status						
Overall Comments:	Not appropriate for patients with a disorder of consciousness. Recommend that the patient be able to follow multi-step commands.					
Entry-Level Criteria	Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments	
Should this tool be required for entry level curricula?	YES	NO	YES	NO	Not validated in the TBI population	
		X		X		
Research Use	YES		NO		Comments	
Is this tool appropriate for use in intervention research studies?	X				Not validated in the TBI population but has been validated in the stroke population.	
Additional information on this measure can be found at www.rehabmeasures.org: Wolf Motor Function Test						

References

Fritz, S. L., Blanton, S., et al. (2009). "Minimal detectable change scores for the Wolf Motor Function Test." *Neurorehabil Neural Repair* 23: 662-667. [Find it on PubMed](#)

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