PARKINSON EDGE SUMMARY DOCUMENT FOR NEUROLOGY PAGE

PARKINSON EDGE Task Force Members

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PROCESS

The Parkinson Evidence Database to Guide Effectiveness (PDEDGE) task force was organized in 2012 and met for the first time at CSM 2013. The team included a balance of clinicians, academicians and scientists reflecting geographical, practice and research experience.

At the 2013 organization meeting, Task Force members developed Parkinson disease specific criteria to evaluate measures and to assess their utility in clinical, academic and research practice settings.

An initial survey generated a candidate list of 116 measures from which the PDEDGE task force Task Force selected 57 tests and measures representing those commonly used for the assessment of persons with Parkinson disease for further PDEDGE analysis.

The selected outcome measures were subdivided into categories for assessment based on the Hoehn and Yahr stages of disease (I through V) for Parkinson's disease. Measures were also assessed based on International Classification of Function (ICF) categories of body structure and function, activity and participation.

The PDEDGE task force then divided into four, two-person teams and each team performed a comprehensive literature review on a subset of the refined list of candidate measures. These teams compiled descriptive and psychometric data on each measure from which a fact sheet was developed. Fact sheets developed by individual team members were initially cross-checked by the "secondary" reviewer on that sheet. Using evaluation criteria developed by the task force, the 2 person teams rated their assigned measures according to test psychometric and clinical utility standards. Following rating consensus within the 2 person review teams, measures were more broadly considered and rated by the full task force of 8 members using an on-line Delphi process. Ratings for individual measures were deliberated until 80% agreement was reached for each of the rated categories.

The PDEDEGE task force worked in close collaboration with project managers at Rehab Measures.org to facilitate the on-line dissemination of task force findings. The task force also developed recommendations in support of a core set of outcome measures representing all ICF categories that were deemed appropriate for use across multiple stages of the disease process, and across multiple settings and for multiple user groups (e.g., clinician, educator, researcher). Findings and recommendations for the use of outcome measures for assessment of those with PD were presented at CSM 2014. The PDEDGE task force summary documents and recommendations are available both on the Neurology Section page and at www.RehabilitationMeasures.org.

TRANSLATION

Ongoing translation efforts for the PDEDGE TF recommendations include: 1) *Clinical Translation*: Select Outcome measures for use in the patient population with Parkinson's disease will be published in the Archives of Physical Medicine and Rehabilitation to maximize visibility of measures with outstanding clinical utility and test psychometrics; 2) *Research Translation*: The PD EDGE TF will recommend targeted research to fill gaps in knowledge related to psychometric properties of outcome measures applicable to persons with PD; and 3.) *Public Translation*: the TF members are putting together documents for public dissemination. This proposed effort aims to strengthen the most promising Parkinson's disease outcome measures through clinical integration and research aimed at enhancing test psychometric properties. The goal of these translational efforts is to improve clinical management, facilitate outcomes research across centers, and research utilization for select measures used to assess individuals with Parkinson's disease.

RECOMMENDATION CATEGORIES

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

3	**Recommend**	• good- psychometrics (may lack information about reliability, validity, or available data to guide interpretation) in target population AND • good clinical utility (e.g. administration/scoring > 20 minutes, may require additional equipment to purchase or construct)
2	**Reasonable to use, but limited study in target group**	• good or excellent psychometric data demonstrated in at least one population*, but insufficient study in target population to support a stronger recommendation (does not have any negative psychometric data) • good clinical utility (e.g. administration/scoring > 20 minutes, may require additional equipment to purchase or construct) No negative psychometric data.
1	**Do not Recommend**	• poor psychometrics (inadequate reliability or validity) OR • limited clinical utility (extensive testing time, unusual or expensive equipment, ongoing costs to administer, etc.)

RECOMMENDATIONS

•Recommendations for use of each outcome measure reviewed were categorized according to four criteria:

- **Disease Stage** (Hoehn & Yahr I, II, III, IV and V);
- **Academic**: Recommendations for each outcome measure to entry level PT education were also included. Measures were characterized as those that students should learn to administer, should be exposed to, or are not recommended.
- **Research:** Measures were categorized as being recommended or not recommended for use in research and whether there was a need for additional research for a given measure.

Click here for completed EDGE documents of all the outcome measures reviewed, which contains detailed information on the psychometric properties of the outcome measures and references.

Click: http://www.rehabmeasures.org/default.aspx to search for completed Rehab Measures templates of for Parkinson's disease outcome measures reviewed. Rehab Measures templates provide additional detail characterizing comprehensive psychometric test properties, comments on clinical utility, and for a full reference list. Rehab Measures will periodically update the the published summary for each posted outcome measure in their database. These updates will occur in concert with ongoing efforts from the PDEDGE task force and other members of the degenerative disease practice community. In addition, each rehab measure summary invites feedback from the professional community.

Documents summarizing each of the PDEDGE task force recommendations are available by clicking on the following links:

One page Summary of Recommendations

Clinical by Disease Severity

Entry Level Education

Research

NeurologySection | 2014

The PDEDGE task force reviewed 60 outcome measures covering the range of body structure and function, activities and participation evaluating each for psychometrics and clinical utility for patients with Parkinson disease. Through literature review, analysis, and a modified Delphi procedure, recommendations were formulated for outcome measures that are highly recommended for use in individuals with Parkinson disease. Additional measures are recommended, but not as strongly. This effort merged work from the Neurology Section Functional Toolbox course and the Consensus Conference for Entry-level Education. Complete materials are available http://www.neuropt.org/professional-resources/neurology-section-outcome-measures-recommendations/parkinson-disease

Recommendations for patients with Parkinson disease:

Highly recommended measures:

Body Structure and Function

MDS-UPDRS revision* - part 3
MDS-UPDRS – part 1
Montreal Cognitive Assessment

Activity

6 minute walk
10 meter walk
Mini BESTest
MDS-UPDRS - part 2
Functional Gait Assessment
Sit to stand 5 times
9 hole peg test

Participation

PDQ-8 or PDQ-39

All measures in the highly recommended category are also recommended for use in research and students learn to administer. * recommend students exposed

Recommended Measures for Specific Constructs

Freezing of Gait

Freezing of Gait questionnaire

Fatigue

Parkinson's Fatigue Scale

Fear of falling

ABC scale

Dual Task

Timed Up and Go cognitive

Task force Chair: Deb Kegelmeyer, PT, DPT, MS, GCS; Terry Ellis PT, PhD, NCS, Alicia Esposito PT, DPT, NCS, Rosemary Gallagher PT, DPT, GCS PhD(c), Cathy C. Harro PT, MS, NCS, Jeffrey Hoder PT, DPT, NCS, Erin Hussey DPT, MS, NCS, Suzanne Oneal , PT, DPT, NCS

Parkinson EDGE Task Force Recommendations: By Disease Stage

NeurologySection

PDEDGE Task Force Recommendations by Disease Stage

Disease Stage Rating	Recommended (3 or 4)	Reasonable to recommend (2)	Do not recommend (1)
Hoehn & Yahr I * PDEDGE task force as part of the core set of measures for Parkinson Disease	Body Structure and Function • BestTest • Fatigue Severity Scale • MDS-UPDRS revision* • Mini BesTest* • Montreal Cognitive Assessment (MoCA)* • Sit to stand, 5 repetitions* • Parkinson's Fatigue Scale	Body Structure and Function • Brief BESTest • Functional Axial Rotation • Mini Mental Status Exam (MMSE) • Multidirectional Functional Reach Test • Profile PD • Purdue Peg Board test • Push-release test • Rapid Step-up Test - timed measure of 10 reps • Saint Louis Mental Status Examination • Timed sit to stand, reps completed in 30 sec • Trunk Impairment Scale • Walking while talking test (WWTT)	Body Structure and Function • Clinical Test of Sensory Integration and Balance • Retropulsive Test • Timed up and go cognitive and manual

PDEDGE Task Force Recommendations by Disease Stage

Disease Stage Rating	Recommended (3 or 4)	Reasonable to recommend (2)	Do not recommend (1)
Hoehn & Yahr I * PDEDGE task force as part of the core set of measures for Parkinson Disease	<u>Activity</u> • 2 minute walk test • 6 Minute walk test* • 360 degree Turn Test • 9 hole peg test* • Dynamic Gait Index • Functional Gait Assessment* • Gait Speed* (10 meter walk test) • Self- Reported Disability Scale in Patients with Parkinson's Disease • Sit to stand, 5 repetitions* • Timed Up and Go	<u>Activity</u> • Dyskinesia Rating Scale • Four square step test • Modified Gait Efficacy Scale • Modified Parkinson's Activity Scale • OPTIMAL (APTA) • Physical Performance Test (PPT) modified • Profile PD • Self-Efficacy Exercise Scale • Single Leg Stance • Timed 10m Backwards walk • Tinetti Mobility Test POMA • Trunk Impairment Scale • Walking while talking test (WWTT)	<u>Activity</u> • Berg Balance Scale • Falls Efficacy Scale - Modified • Freezing of Gait Questionnaire • Functional Independence Measure (FIM) • Functional reach test • Stops Walking When Talking Test (SWWT) • Supine to stand • Timed up and go cognitive and manual • Unified Dyskinesia Rating Scale
	<u>Participation</u> • Activities Specific Balance Confidence Scale (ABC) • Continuous Scale Physical Functional Performance Test (CS-PFP)	<u>Participation</u> • Parkinson's ADL Scale • SF-36 • SF-12 • Walking while talking test (WWTT)	<u>Participation</u> • History of Falls Questionnaire •

PDEDGE Task Force Recommendations by Disease Stage

Disease Stage Rating	Recommended (3 or 4)	Reasonable to recommend (2)	Do not recommend (1)
Hoehn & Yahr I * PDEDGE task force as part of the core set of measures for Parkinson Disease	• PDQ-39 • PDQ-8 (short version)	• World Health Organization Quality of Life-BREF (WHOQOL-BREF)	

PDEDGE Task Force Recommendations by Disease Stage

Disease Stage Rating	Recommended (3 or 4)	Reasonable to recommend (2)	Do not recommend (1)
Hoehn & Yahr II * PDEDGE task force as part of the core set of measures for Parkinson Disease	<u>Body Structure and Function</u> • BestTest • Brief BESTest • Fatigue Severity Scale • MDS-UPDRS revision* • Mini BESTest* • Mini Mental Status Exam (MMSE) • Montreal Cognitive Assessment (MoCA) * • Parkinson's Fatigue Scale • Push-release test • Sit to stand, 5 repetitions*	<u>Body Structure and Function</u> • Functional Axial Rotation • Multidirectional Functional Reach Test • Profile PD • Rapid Step-up Test - timed measure of 10 reps • Saint Louis Mental Status Examination • Timed up and go cognitive and manual • Timed sit to stand, reps completed in 30 sec • Trunk Impairment Scale • Walking while talking test (WWTT)	<u>Body Structure and Function</u> • Clinical Test of Sensory Integration and Balance • Retropulsive Test
Hoehn & Yahr II	<u>Activity</u> • 2 minute walk test • 6 Minute walk test* • 360 degree Turn Test • 9 hole peg test* • Berg Balance Scale • Dynamic Gait Index • Four square step test • Freezing of Gait Questionnaire • Functional Gait Assessment*	<u>Activity</u> • Modified Gait Efficacy Scale • Self-Efficacy Exercise Scale • Single Leg Stance • Dyskinesia Rating Scale • Modified Parkinson's Activity Scale • OPTIMAL (APTA) • Timed 10m Backwards walk	<u>Activity</u> • Falls Efficacy Scale - Modified • Functional Independence Measure (FIM) • Stops Walking When Talking Test (SWWT) • Supine to stand

PDEDGE Task Force Recommendations by Disease Stage

Disease Stage Rating	Recommended (3 or 4)	Reasonable to recommend (2)	Do not recommend (1)
* PDEDGE task force as part of the core set of measures for Parkinson Disease	• Functional reach test • Gait Speed* (10 meter walk test) • Physical Performance Test (PPT) modified • Purdue Peg Board test • Self- Reported Disability Scale in Patients with Parkinson's Disease • Sit to stand, 5 repetitions* • Timed Up and Go • Tinetti Mobility Test POMA	• Timed up and go cognitive and manual • Trunk Impairment Scale • Unified Dyskinesia Rating Scale • Walking while talking test (WWTT)	
	<u>Participation</u> • Activities Specific Balance Confidence Scale (ABC) • Continuous Scale Physical Functional Performance Test (CS-PFP) • PDQ-39* • PDQ-8* (short version)	<u>Participation</u> • Parkinsons ADL Scale • SF-36 • SF-12 • Walking while talking test (WWTT) • World Health Organization Quality of Life-BREF (WHOQOL-BREF)	<u>Participation</u> • History of Falls Questionnaire

PDEDGE Task Force Recommendations by Disease Stage

Disease Stage Rating	Recommended (3 or 4)	Reasonable to recommend (2)	Do not recommend (1)
Hoehn & Yahr III * PDEDGE task force as part of the core set of measures for Parkinson Disease	Body Structure and Function • BestTest • Brief BESTest • Fatigue Severity Scale • MDS-UPDRS revision* • Mini BESTest* • Mini Mental Status Exam (MMSE) • Montreal Cognitive Assessment (MoCA) * • Parkinson's Fatigue Scale • Push-release test • Sit to stand, 5 repetitiions*	Body Structure and Function • Functional Axial Rotation • Multidirectional Functional Reach Test • Profile PD • Rapid Step-up Test - timed measure of 10 reps • Saint Louis Mental Status Examination • Timed up and go cognitive and manual • Timed sit to stand, reps completed in 30 sec • Trunk Impairment Scale • Walking while talking test (WWTT)	Body Structure and Function • Clinical Test of Sensory Integration and Balance Retropulsive Test
	Activity • 2 minute walk test • 6 Minute walk test* • 360 degree Turn Test • 9 hole peg test* • Berg Balance Scale • BESTest • Dynamic Gait Index • Four square step test • Freezing of Gait Questionnaire • Functional Gait	Activity • Functional Independence Measure (FIM) • Modified Gait Efficacy Scale • Self-Efficacy Exercise Scale • Single Leg Stance • Dyskinesia Rating Scale • Modified Parkinson's Activity Scale • OPTIMAL (APTA)	Activity • Falls Efficacy Scale - Modified • Stops Walking When Talking Test (SWWT) • Supine to stand

PDEDGE Task Force Recommendations by Disease Stage

Disease Stage Rating	Recommended (3 or 4)	Reasonable to recommend (2)	Do not recommend (1)
Hoehn & Yahr III * PDEDGE task force as part of the core set of measures for Parkinson Disease	Assessment* • Functional reach test • Gait Speed* (10 meter walk test) • • Min BESTest* • Physical Performance Test (PPT) modified • Purdue Peg Board test • Self- Reported Disability Scale in Patients with Parkinson's Disease • Sit to stand, 5 repetitions* • Timed Up and Go • Tinetti Mobility Test POMA	• Timed 10m Backwards walk • Timed up and go cognitive and manual • Trunk Impairment Scale • Unified Dyskinesia Rating Scale • Walking while talking test (WWTT)	
	<u>Participation</u> • Activities Specific Balance Confidence Scale (ABC) • Continuous Scale Physical Functional Performance Test (CS-PFP) • PDQ-39* • PDQ-8* (short version)	<u>Participation</u> • Parkinsons ADL Scale • SF-36 • SF-12 • Timed up and go cognitive and manual • Walking while talking test (WWTT) • World Health Organization Quality of Life-BREF (WHOQOL-BREF)	<u>Participation</u> • History of Falls Questionnaire

PDEDGE Task Force Recommendations by Disease Stage

Disease Stage Rating	Recommended (3 or 4)	Reasonable to recommend (2)	Do not recommend (1)
Hoehn & Yahr IV * PDEDGE task force as part of the core set of measures for Parkinson Disease	<u>Body Structure and Function</u> • BestTest • Brief BESTest • MDS-UPDRS revision* • Mini BESTest* • Mini Mental Status Exam (MMSE) • Montreal Cognitive Assessment (MoCA) * • Parkinson's Fatigue Scale • Purdue Peg Board test • Push-release test • Sit to stand, 5 repetitions*	<u>Body Structure and Function</u> • Clinical Test of Sensory Integration and Balance • Fatigue Severity Scale • Functional Axial Rotation • Multidirectional • Rapid Step-up Test - timed measure of 10 reps • Saint Louis Mental Status Examination • Timed sit to stand, reps completed in 30 sec second timed sit-to-stand • Trunk Impairment Scale • Unified Dyskinesia Rating Scale	<u>Body Structure and Function</u> • Functional Reach Test • Retropulsive Test • Timed up and go cognitive and manual
	<u>Activity</u> • 2 minute walk test • 6 Minute walk test* • 360 degree Turn Test • 9 hole peg test* • BESTest • Dynamic Gait Index • Four square step test • Freezing of Gait Questionnaire • Functional Gait Assessment*	<u>Activity</u> • Functional Independence Measure (FIM) • Functional reach test • Modified Gait Efficacy Scale • Self-Efficacy Exercise Scale • Dyskinesia Rating Scale • Modified Parkinson's Activity Scale • Timed 10m Backwards	<u>Activity</u> • Berg Balance Scale • Falls Efficacy Scale - Modified • OPTIMAL (APTA) • Profile PD • Single Leg Stance • Stops Walking When Talking Test (SWWT) • Supine to stand • Timed Up and Go • Timed up and go cognitive

PDEDGE Task Force Recommendations by Disease Stage

Disease Stage Rating	Recommended (3 or 4)	Reasonable to recommend (2)	Do not recommend (1)
Hoehn & Yahr IV * PDEDGE task force as part of the core set of measures for Parkinson Disease	• Gait Speed* (10 meter walk test) • Mini BESTest* • Physical Performance Test (PPT) modified • Self- Reported Disability Scale in Patients with Parkinson's Disease • Sit to stand, 5 repetitions* • Tinetti Mobility Test POMA • Walking while talking test (WWTT)	walk • Trunk Impairment Scale	and manual
	<u>Participation</u> • PDQ-39* • PDQ-8* (short version)	<u>Participation</u> • Activities Specific Balance Confidence Scale (ABC) • Continuous Scale Physical Parkinsons ADL Scale • Functional Performance Test (CS-PFP) • SF-36 • SF-12 • World Health Organization Quality of Life-BREF (WHOQOL-BREF)	<u>Participation</u> • History of Falls Questionnaire • Timed up and go cognitive and manual

PDEDGE Task Force Recommendations by Disease Stage

Disease Stage Rating	Recommended (3 or 4)	Reasonable to recommend (2)	Do not recommend (1)
Hoehn & Yahr V * PDEDGE task force as part of the core set of measures for Parkinson Disease	Body Structure and Function • MDS-UPDRS revision* • Parkinson's Fatigue Scale	Body Structure and Function • Fatigue Severity Scale • Mini Mental Status Exam (MMSE) • Montreal Cognitive Assessment (MoCA) * • Purdue Peg Board test • Push-release test • Rapid Step-up Test - timed measure of 10 reps • Saint Louis Mental Status Examination	Body Structure and Function • 30 second timed sit-to-stand • BestTest • Brief BESTest • Clinical Test of Sensory Integration and Balance • Functional Axial Rotation • Functional Reach Test • Mini BESTest* • Multidirectional reach test • Profile PD • Retropulsive Test • Sit to stand, 5 repetitions* • Timed up and go cognitive and manual • Trunk Impairment Scale • Unified Dyskinesia Rating Scale

PDEDGE Task Force Recommendations by Disease Stage

Disease Stage Rating	Recommended (3 or 4)	Reasonable to recommend (2)	Do not recommend (1)
Hoehn & Yahr V * PDEDGE task force as part of the core set of measures for Parkinson Disease	<u>Activity</u> • 360 degree Turn Test • Self- Reported Disability Scale in Patients with Parkinson's Disease	<u>Activity</u> • Functional Independence Measure (FIM) • Physical Performance Test (PPT) modified • Self-Efficacy Exercise Scale	<u>Activity</u> • 2 minute walk test • 6 Minute walk test* • 9 hole peg test* • Berg Balance Scale • BESTest • Dynamic Gait Index • Dyskinesia Rating Scale Falls Efficacy Scale - Modified • Four square step test • Freezing of Gait Questionnaire • Functional reach test • Functional Gait Assessment • Functional Reach • Gait Speed* (10 meter walk test) • Mini BESTest* • Modified Gait Efficacy Scale • Modified Parkinson's Activity Scale • OPTIMAL (APTA) • Single Leg Stance • Sit to stand, 5 repetitions* • Stops Walking When Talking Test (SWWT)

PDEDGE Task Force Recommendations by Disease Stage

Disease Stage Rating	Recommended (3 or 4)	Reasonable to recommend (2)	Do not recommend (1)
Hoehn & Yahr V * PDEDGE task force as part of the core set of measures for Parkinson Disease			• Supine to stand • Timed 10m Backwards walk • Timed Up and Go • Timed up and go cognitive and manual • Tinetti Mobility Test POMA • Trunk Impairment Scale • Walking while talking test (WWTT)
	<u>Participation</u> • PDQ-39* • PDQ-8* (short version)	<u>Participation</u> • Continuous Scale Physical Parkinsons ADL Scale • Functional Performance Test (CS-PFP) • SF-36 • SF-12 • World Health Organization Quality of Life-BREF (WHOQOL-BREF)	<u>Participation</u> • Activities Specific Balance Confidence Scale (ABC) • History of Falls Questionnaire • Timed up and go cognitive and manual

Parkinson EDGE Task Force Recommendations: Entry Level Physical Therapy Instruction

NeurologySection

Entry Level Education Recommendations:

Body Structure and Function

Students Learn

- Mini BESTest
- Montreal Cognitive Assessment
- Sit to stand, 5 repetitions*

Students Exposed

- MDS-UPDRS revision – Part 1 and 3
- Timed up and go cognitive

Entry Level Education Recommendations:

Activity and Participation

Students Learn

- 6 minute walk test
- 10 meter walk test
- Mini BESTest
- Functional gait assessment
- Sit to stand 5 times
- 9 hole peg test

Students Exposed

- MDS-UPDRS revision Part 2
- Timed up and go cognitive
- Freezing of gait questionnaire
- Parkinson's fatigue scale

Entry Level Education Recommendations:

Participation

Students Exposed

- PDQ – 8 or PDQ-39
- Activities-specific Balance confidence Scale

Parkinson EDGE Task Force Recommendations: Research

NeurologySection

Research Recommendations:

Body Structure and Function

BESTest
Fatigue Severity Scale
MDS-UPDRS revision
Mini Mental Status Exam (MMSE)
Mini BESTest
Montreal Cognitive Assessment (MoCA)
Parkinson's Fatigue Scale
Purdue Peg Board test
Push-release test
Sit to stand 5 times

Research Recommendations:

Activity

2 minute walk test
6 Minute walk test
Activities Specific Balance Confidence Scale (ABC)
Berg Balance Scale
BESTest
Dynamic Gait Index
Four square step test
Freezing of Gait Questionnaire
Functional Gait Assessment
Functional reach test
Gait Speed (10 meter walk test)
MDS-UPDRS revision
Mini BESTest
Modified Gait Efficacy Scale
Physical Performance Test (PPT)
Self-Efficacy Exercise Scale
Timed up and go (TUG)
Timed up and go cognitive and manual
Continuous Scale Physical Functional Parkinson's Fatigue Scale
Performance Test (CS-PFP)
Sit to stand 5 times Timed Up and Go

Research Recommendations:

Participation

MDS-UPDRS revision
PDQ-39
PDQ-8 (short version)
SF-36
World Health Organization Quality of Life-BREF (WHOQOL-BREF)

		HOEHN & YAHR					ENTRY-LEVEL CRITERIA		RESEARCH USE
MEASURE	**ICF Category**	**I**	**II**	**III**	**IV**	**V**	**Students should learn to administer tool? (Y/N)**	**Students should be exposed to tool? (Y/N)**	**Is this tool appropriate for use in intervention research studies? (Y/N)**
2 minute walk test	Activity	3	3	3	3	1	Y		Y
360 degree Turn Test	Activity	3	3	3	3	3	N	N	N
6 Minute walk test	Activity	4	4	4	4	1	Y		Y
9 hole peg test	Activity	3	3	3	3	1	Y		N
Activities Specific Balance Confidence Scale (ABC)	Activity and Participation	3	3	3	2	1	N	Y	Y
Berg Balance Scale	Activity	1	4	4	1	1	N	N	Y
BestTest	Body Structure and Activity	3	3	3	3	1	N	Y	Y
Brief BESTest	Body Structure and Activity	2	3	3	3	1	N	N	N
Continuous Scale Physical Functional Performance Test (CS-PFP)	Activity and Participation	3	3	3	2	2	N	N	Y
CTSIB	Body Structure	1	1	1	2	1	N	N	N
Dynamic Gait Index -	Activity	4	4	4	4	1	N	N	Y
Dyskinesia Rating Scale (Rush Dyskinesia Scale)	Activity	2	2	2	2	1	N	N	N
Falls Efficacy Scale - Modified	Activity	1	1	1	1	1	N	N	N
Fatigue Severity Scale	Body Structure	3	3	3	2	2	N	N	Y
Four square step test	Activity	2	3	3	3	1	N	N	Y
Freezing of Gait Questionnaire	Activity	1	3	3	3	1	N	Y	Y
Functional Axial Rotation	Body Structure	2	2	2	2	1	N	N	N
Functional Gait Assessment	Activity	4	4	4	4	1	Y		Y
Functional Independence Measure (FIM)	Activity	1	1	2	2	2	N	N	N
Functional reach test	Activity	1	3	3	2	1	N	N	Y
Gait Speed (10 meter walk test)	Activity	4	4	4	3	1	Y		Y
history of falls questionnaire	Participation	1	1	1	1	1	N	N	N
MDS-UPDRS revision	Body Structure and Activity and Participation	4	4	4	4	4	N	Y	Y
Mini BesTest	Body Structure and Activity	4	4	4	4	1	Y		Y

		HOEHN & YAHR					ENTRY-LEVEL CRITERIA		RESEARCH USE
MEASURE	**ICF Category**	**I**	**II**	**III**	**IV**	**V**	**Students should learn to administer tool? (Y/N)**	**Students should be exposed to tool? (Y/N)**	**Is this tool appropriate for use in intervention research studies? (Y/N)**
Mini Mental Status Exam (MMSE)	Body Structure	2	4	4	4	2	N	N	Y
Modified Gait Efficacy Scale	Activity	2	2	2	2	1	N	N	Y
Modified Parkinson's Activity Scale (PAS)	Activity	2	2	2	2	1	N	N	N
Montreal Cognitive Assessment (MoCA)	Body Structure	4	4	4	4	2	Y		Y
Multidirectional Functional Reach Test	Body Structure and Activity	2	2	2	2	1	N	N	N
OPTIMAL (APTA)	Activity	2	2	2	1	1	N	N	N
Parkinsons ADL Scale	Activity and Participation	2	2	2	2	2	N	N	N
Parkinson's Fatigue Scale	Body Structure and Activity	3	3	3	3	3	N	Y	Y
PDQ-39	Participation	4	4	4	4	4	Y		Y
PDQ-8 (short version)	Participation	4	4	4	4	4	Y		Y
Physical Performance Test (PPT) modified	Activity	2	3	3	3	2	N	N	Y
Profile PD (previously called DUKE university PD rating scale)	Body Structure and Activity	2	2	2	1	1	N	N	N
Purdue Peg Board test	Body Structure and Activity	2	3	3	3	2	N	N	Y
Push-release test	Body Structure and Activity	2	3	3	3	2	N	N	Y
Rapid Step-up Test	Body Structure and Activity	2	2	2	2	2	N	N	N
Retropulsive Test	Body Structure	1	1	1	1	1	N	N	N
Saint Louis Mental Status Examination	Body Structure	2	2	2	2	2	N	N	N
Self- Reported Disability Scale in Patients with Parkinson's Disease	Activity	3	3	3	3	3	N	N	N
Self-Efficacy Exercise Scale	Activity	2	2	2	2	2	N	N	Y
SF-12	Participation	2	2	2	2	2	N	N	N
SF-36	Participation	2	2	2	2	2	N	N	Y
Single Leg Stance	Activity	2	2	2	1	1	N	N	Y
Stops Walking When Talking Test (SWWT)	Activity	1	1	1	1	1	N	N	N

		HOEHN & YAHR					ENTRY-LEVEL CRITERIA		RESEARCH USE
MEASURE	**ICF Category**	**I**	**II**	**III**	**IV**	**V**	**Students should learn to administer tool? (Y/N)**	**Students should be exposed to tool? (Y/N)**	**Is this tool appropriate for use in intervention research studies? (Y/N)**
Supine to stand	Activity	1	1	1	1	1	N	N	N
Timed Sit to Stand, 5 repetitiions	Body Structure and Activity	4	4	4	4	1	Y		Y
Timed sit to stand, repetitions completed in 30 sec	Body Structure and Activity	2	2	2	2	1	N	N	N
Timed 10m Backwards walk	Activity	2	2	2	2	1	N	N	N
Timed Up and Go	Activity	4	4	4	1	1	Y	N	Y
Timed up and go cognitive and manual	Activity	1	2	2	2	1	N	Y	Y
Tinnetti Mobility Test POMA	Activity	2	3	3	3	1	N	N	N
Trunk Impairment Scale	Body Structure and Activity	2	2	2	2	1	N	N	N
Unified Dyskinesia Rating Scale	Body Structure and Activity	1	2	2	2	1	N	N	N
Walking while talking test (WWTT)	Activity and Participation	2	2	2	2	1	N	N	N
World Health Organization Quality of Life-BREF (WHOQOL-BREF)	Participation	2	2	2	2	2	N	N	Y

Parkinson Edge Outcome Measures Taskforce

Instrument name: 2 Minute Walk Test	
Reviewer: Jeffrey Hoder and Terry Ellis	**Date of review:** 2/20/2012

ICF domain (check all that apply):

_____ Body structure _____ Body function __X_ Activity _____ Participation ____ environment

Construct/s measured (check all that apply):

Body structure and Function	Activity	Participation
_**X**_Aerobic capacity/endurance ___Ataxia _**X**_Cardiovascular/pulmonary status ___Cognition ___Coordination (non-equilibrium) ___Dizziness ___Dual Tasks _**X**_Fatigue ___Flexibility ___Muscle performance ___Muscle tone / spasticity ___Pain ___Sensory integration ___Somatosensation ___Other:	___Balance/falls ___Bed mobility _**X**_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: http://www.rehabmeasures.org/Lists/RehabMeasures/PrintView.aspx?ID=896

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I		**X**			
II		**X**			**Largest range of variability in this stage (Schenkman, 2011)**
III		**X**			**Assistive device may be utilized, if client can still ambulate independently.**
IV		**X**			**Once assistance is needed to ambulate,**

					this test becomes less valid.
V				**X**	
Overall Comments:	Initial study by Light et al in JNPT 1997, required (3) trials, done before a 2.0 hour functional assessment battery, during a functional assessment battery and at the end of a functional assessment battery. They took the measurements of the 3rd trial. H&Y III or IV. Some articles site comfortable or preferred walking speed, some as fast as possible. Light et al "cover as much ground as you can in 2 minutes"; 2 practice trials, one test secondary to testing effects.				
Overall Comments:	No cost. Easy to administer.				

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				
Research Use	**YES**		**NO**		**Comments**
Is this tool appropriate for use in intervention research studies?	X				

NIH toolbox adapted the instructions from the American Thoracic Society's 6 minute walk test. Normative data establish with n=4800 ages 5-85. NIH study utilized a 50 ft course. One trial was performed. The 2 MWT requires up to 2 practice sessions to reduce a practice effect (Light et al, 1997), with Light noting that the walking distance increased significantly over 3 trials.

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.

Brooks, D., Davis, A. M., et al. (2007). "The feasibility of six-minute and two-minute walk tests in in-patient geriatric rehabilitation." Can J Aging 26(2): 159-162.

Canning, C. G., Ada, L., Johnson, J. J., & McWhirter, S. (2006). Walking capacity in mild to moderate Parkinson's disease. Archives of Physical Medicine and Rehabilitation, 87(3), 371-375. doi: 10.1016/j.apmr.2005.11.021

Connelly, D. M., Thomas, B. K., et al. (2009). "Clinical utility of the 2-minute walk test for older adults living in long-term care." Physiotherapy Canada 61(2): 78-87. Find it on PubMed

Ellis, T., Katz, D. I., White, D. K., DePiero, T. J., Hohler, A. D., & Saint-Hilaire, M. (2008). Effectiveness of an inpatient multidisciplinary rehabilitation program for people with Parkinson disease. Phys Ther, 88(7), 812-819. doi: 10.2522/ptj.20070265

Light, K.E., Bebrman, A.L., Thigpen, M., & Triggs, W.J. (1997). The 2-minute walk test: a tool for evaluating walking endurance in clients with Parkinson's disease. Journal of Neurologic Physical Therapy, 21(4), 136.

Miller, P. A., Moreland, J., et al. (2002). "Measurement properties of a standardized version of the two-minute walk test for individuals with neurological dysfunction." Physiotherapy Canada 54(4): 241-248.

Reuben D; Magasi S; McCreath H; Bohannon RW; Wang Y-C; Bubela DJ; et al. (2013) “Motor assessment using the NIH Toolbox .” Neurology 80 (11 Supplement 3).

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

Schenkman, M., Ellis, T., Christiansen, C., Baron, A. E., Tickle-Degnen, L., Hall, D. A., & Wagenaar, R. (2011). Profile of functional limitations and task performance among people with early- and middle-stage Parkinson disease. Phys Ther, 91(9), 1339-1354. doi: 10.2522/ptj.20100236

Stewart, D. A., Burns, J. M. A., et al. (1990). "The two-minute walking test: a sensitive index of mobility in the rehabilitation of elderly patients." Clinical Rehabilitation 4(4): 273-276.

White, D. K., Wagenaar, R. C., Ellis, T. D., & Tickle-Degnen, L. (2009). Changes in walking activity and endurance following rehabilitation for people with Parkinson disease. Arch Phys Med Rehabil, 90(1), 43-50. doi: 10.1016/j.apmr.2008.06.034

Parkinson Edge Outcome Measures Taskforce

Instrument name: 5x sit to stand	
Reviewer: Alicia Esposito and Deb Kegelmeyer	**Date of review:** 4/28/13; 5/31/13

ICF domain (check all that apply):

_____ Body structure ___x__ Body function ____x_ Activity _____ Participation ____ environment

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 _X__Muscle performance ___Muscle tone / spasticity ___Pain ___Sensory integration ___Somatosensation ___Other:	__X_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:

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	na	Comments
I	**X**					2 strong studies in PD with large subject numbers and reported data on each H&Y stage
II	**X**					
III	**X**					
IV	**x**					
V					**x**	May not be appropriate as patient

						would not be able to perform sit to stand
Overall Comments:	Variations of sit to stand tests exist • 10x sit to stand • 10 second sit to stand • 30 second sit to stand Measurements of time are more precise (5x sit to stand; 10x sit to stand) then counting of repetitions (30 second sit to stand; 10 second sit to stand). Individuals who are weak however may not be able to complete the requisite number of repetitions and consequently counting the number of repetitions in a pre set amount of time may be preferable for certain patient populations. Duncan et.al. 2011 found that individuals in each H and Y stage (I=2, II=2, III=2 and IV=1) were unable to perform FTSTS because they were unable to arise from a chair without using the upper extremities. There may be some floor affect across stages of the disease.					

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				
Research Use	**YES**		**NO**		**Comments**
Is this tool appropriate for use in intervention research studies?	X				Good psychometric properties and establishment of normative data

References

Bohannon, R. W. (2006). "Reference values for the five-repetition sit-to-stand test: a descriptive meta-analysis of data from elders." Perceptual and Motor Skills 103(1): 215-222.

Buatois, S., Miljkovic, D., et al. (2008). "Five times sit to stand test is a predictor of recurrent falls in healthy community-living subjects aged 65 and older." Journal of the American Geriatrics Society 56(8): 1575-1577.

Buatois, S., Perret-Guillaume, C., et al. (2010). "A simple clinical scale to stratify risk of recurrent falls in community-dwelling adults aged 65 years and older." Physical Therapy 90(4): 550-560.

Duncan, R et al. (2011). "Five times sit-to-stand test performance in parkinson's disease." Arch Phys Med Rehabil 92: 1431-6.

Lord, S. R., Murray, S. M., et al. (2002). "Sit-to-stand performance depends on sensation, speed, balance, and psychological status in addition to strength in older people." Journals of Gerontology. Series A, Biological Sciences and Medical Sciences 57(8): M539-543.

Novy, D. M., Simmonds, M. J., et al. (2002). "Physical performance tasks: what are the underlying constructs?" Archives of Physical Medicine and Rehabilitation 83(1): 44-47. Find it on PubMed

Paul, S et al (2012). Reproducibility of measures of leg muscle power, leg muscle strength, postural sway and mobility in people with parkinson's disease." Gait and Posture 36: 639-642.

Schaubert, K. L. and Bohannon, R. W. (2005). "Reliability and validity of three strength measures obtained from community-dwelling elderly persons." J Strength Cond Res 19(3): 717-720. Simmonds, M.

Tiedemann, A., Shimadda, H., et al. (2008). "The comparative ability of eight functional mobility tests for predicting falls in community-dwelling older people." Age and Ageing 37(4): 430-435.

Whitney, S. L., Wrisley, D. M., et al. (2005). "Clinical measurement of sit-to-stand performance in people with balance disorders: validity of data for the Five-Times-Sit-to-Stand Test." Physical Therapy 85(10): 1034-1045.

Parkinson Edge Outcome Measures Taskforce

Instrument name: 6 Minute Walk Test	
Reviewer: Jeffrey Hoder and Terry Ellis	**Date of review:** 2/20/2013

ICF domain (check all that apply):

_____ Body structure _____ Body function __X__Activity _____ Participation ____ environment

Construct/s measured (check all that apply):

Body structure and Function	Activity	Participation
_**X**_Aerobic capacity/endurance ___Ataxia _**X**_Cardiovascular/pulmonary status ___Cognition ___Coordination (non-equilibrium) ___Dizziness ___Dual Tasks _**X**_Fatigue ___Flexibility ___Muscle performance ___Muscle tone / spasticity ___Pain ___Sensory integration ___Somatosensation ___Other:	___Balance/falls ___Bed mobility _**X**_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: http://www.rehabmeasures.org/Lists/RehabMeasures/PrintView.aspx?ID=895

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I	**X**				There is a significant amount of normative data published.
II	**X**				
III	**X**				**Assistive device may be utilized, if client can still ambulate independently.**
IV	**X**				**Once assistance is needed to ambulate,**

					this test becomes less valid.
V				**X**	
Overall Comments:	Excellent psychometrics. Frequently utilized within the literature to evaluate walking capacity. There is some variability in the length of track/hallway that is utilized in the research. Generally either 30-30.5m (Canning, 2006; Falvo, 2009) or 100ft length (Steffen, 2008; American Thoracic Society, 2002), with recommended turning around cones.				

Overall Comments:	**General instructions:** The participants were required to walk back and forth along the 30-m walkway for 6 minutes. Participants were instructed to walk ***as far as possible*** in the 6 minutes and were provided with standardized encouragement every minute, for example, "You are doing well, you have 5 minutes to go." Total distance walked during the test was recorded to the nearest tenth of a meter and the 6-minute average walking velocity was calculated by dividing the total distance walked by the total number of seconds in the test. To reflect the intensity of exercise performed, heart rate, breathlessness, and leg muscle fatigue were recorded on immediate completion of the test. Leg muscle fatigue were evaluated by using the Borg 10-point Rating of Perceived Exertion scale. –Canning, 2006 Steffen, 2008: MDC=82 m; ICC=.96				
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				
Research Use	**YES**		**NO**		**Comments**
Is this tool appropriate for use in intervention research studies?	**X**				

REFERENCES

ATS statement: guidelines for the six-minute walk test. Am J Respir Crit Care Med. 2002;166(1):111–117.

Canning CG, Ada L, Johnson JJ, McWhirter S. Walking capacity in mild to moderate Parkinson's disease. Arch Phys Med Rehabil 2006;87:371-5.

Enright, P. L. and Sherrill, D. L. (1998). "Reference equations for the six-minute walk in healthy adults." Am J Respir Crit Care Med 158(5 Pt 1): 1384-1387.

Harada, N., Chiu, V., et al. (1999). "Mobility-related function in older adults: assessment with a 6-minute walk test." Archives of physical medicine and rehabilitation 80(7): 837-841.

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.

Schenkman M, Cutson T, Kuchibhatla M, Chandler J, Pieper C. (1997) "Reliability of impairment and physical performance measures for persons with Parkinson's disease." Phys Ther 77:19-27.

Steffen, T., Hacker, T., et al. (2002). "Age-and gender-related test performance in community-dwelling elderly people: Six-Minute Walk Test, Berg Balance Scale, Timed Up & Go Test, and gait speeds." Physical Therapy 82(2): 128.

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.

Parkinson Edge Outcome Measures Taskforce

Instrument name: 9 Hole Peg Test	
Primary Reviewer: Suzanne K. O'Neal, PT, DPT, NCS and Rosemary Gallagher, PT, DPT, GCS	**Date of review:** May 2013

ICF domain (check all that apply):

__**X**__ Body function/structure __**X**__ Activity _____ Participation

Construct/s measured (check all that apply):

Body structure and Function	Activity	Participation
___Aerobic capacity/endurance ___Ataxia ___Cardiovascular/pulmonary status ___Cognition _**X**_Coordination (non-equilibrium) ___Dizziness ___Dual Tasks ___Fatigue ___Flexibility ___Muscle performance ___Muscle tone / spasticity ___Pain ___Sensory integration ___Somatosensation _**X**_Other: Dexterity	___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:

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I		**X**			
II		**X**			
III		**X**			
IV		**X**			
V				**X**	Stage 5 not included in studies used for this review.
Overall Comments:					

	Excellent test-retest reliability. MDC established in one study. No other psychometrics found for the PD 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**	Widely used in clinical settings.
	X				
Research Use	**YES**		**NO**		**Comments**
Is this tool appropriate for use in intervention research studies?			**X**		

REFERENCES

Earhart, G., Cavanaugh, J., et al. (2011). “The 9-Hole Peg Test of Upper Extremity Function: Average Values, Test-Retest Reliability, and Factors Contributing to Performance in People With Parkinson Disease.” JNPT 35(4): 157-163.

Mathiowetz, V., Kashman, N., et al. (1985). "Grip and pinch strength: normative data for adults." Archives of Physical Medicine and Rehabilitation 66(2): 69-74.

Oxford Grice, K., Vogel, K. A., et al. (2003). "Adult norms for a commercially available Nine Hole Peg Test for finger dexterity." American Journal of Occupational Therapy 57(5): 570-573.

Wang, Y., Magasi, S., et al. (2011). “Assessing Dexterity Function: A Comparison of Two Alternatives for the NIH Toolbox”. Journal of Hand Therapy 2011 Oct-Dec;24(4):313-20.

Parkinson Edge Outcome Measures Taskforce

Instrument name: 10 Meter Walk Test	
Reviewer: Jeffrey Hoder and Terry Ellis	**Date of review: 2/20/2012**

ICF domain (check all that apply):

_____ Body structure _____ Body function __ **X** _ Activity _____ Participation ____ environment

Construct/s measured (check all that apply):

Body structure and Function	**Activity that apply**	**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 _**X**_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: http://www.rehabmeasures.org/Lists/RehabMeasures/PrintView.aspx?ID=901

Recommendation Categories

Hoehn and Yahr stage	**4**	**3**	**2**	**1**	**Comments**
I	**X**				There is a significant amount of normative data established.
II	**X**				
III	**X**				**Assistive device may be utilized, if client can still ambulate independently.**
IV		**X**			**Once assistance is needed to ambulate,**

					this test becomes less valid.
V				**X**	

Overall Comments:	Should we retitle this test as "Gait Speed" with 10 meters as the preferred distance? NIH Toolbox utilized a 4 meter gait speed and has n>4800 for ages 5-85. Generally the average of 2 trials for comfortable, 2 trials for fast speed. Comfortable speed and as fast as possible with time recorded to the nearest 100th of a second and documented in meters/second. 2 options: 1. A distance of 10 m is marked on the floor. The subject begins the test 5 m before the starting line and completed the test 5 m after the finish line. Time is recorded from the time when the subject crossed the starting line to the time when he or she crossed the finish line. (Schenkman, 1997; Fritz, 2009) 2. A distance of 10 m is marked on the floor. Subsequent marks are placed at 2 m from starting point and 2 m from ending point to allow a 6 m timed middle section for the test. Subject starts, walks 2 meters, is timed over the middle 6 meters, then timer is stopped 2 meters before finish. (Brusse, 2005; Steffen, 2008) Steffen, 2008: 37 community-dwelling adults with parkinsonism MDC = 0.18 m/s comfortable; 0.25 m/s fast ICC=.96 comfortable; .97 fast
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				
Research Use	**YES**		**NO**		**Comments**
Is this tool appropriate for use in intervention	X				

research studies?			

References

Bohannon, R. W. (1997). "Comfortable and maximum walking speed of adults aged 20-79 years: reference values and determinants." Age Ageing 26(1): 15-1.

Fritz, S., Lusardi, M.(2009).White Paper: “Walking Speed: the Sixth Vital Sign.” Journal of Geriatric Physical Therapy 32(3): 110.

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.

Reuben D; Magasi S; McCreath H; Bohannon RW; Wang Y-C; Bubela DJ; et al. (2013) “Motor assessment using the NIH Toolbox .” Neurology 80 (11 Supplement 3).

Schenkman, M., Cutson, TM, Kuchibhatla, M, Chandler, J, and Pieper, C. (1997). “Reliability of Impairment and Physical Performance Measures for Person’s with Parkinson’s Disease.” Physical Therapy 77(1): 19-27.

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): 733-746.

Tyson, S. and Connell, L. (2009). "The psychometric properties and clinical utility of measures of walking and mobility in neurological conditions: a systematic review." Clin Rehabil 23(11): 1018-1033.

Watson, M. J. (2002). "Refining the ten-metre walking test for use with neurologically impaired people." Physiotherapy 88(7): 386-397.

Parkinson Edge Outcome Measures Taskforce

Instrument name: 30 second sit to stand test	
Reviewer: Alicia Esposito, PT, DPT, NCS and Deb Kegelmeyer DPT, MS, GCS	**Date of review:** 4/30/13

ICF domain (check all that apply):

___X__ Body structure _____ Body function __ X___ Activity _____ Participation ____ environment

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 _X__Muscle performance ___Muscle tone / spasticity ___Pain ___Sensory integration ___Somatosensation ___Other:	___Balance/falls ___Bed mobility ___Gait (include stairs) ___High Level mobility _X__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:

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I			**X**		
II			**X**		
III			**X**		
IV			**X**		
V			**N/A**		
Overall Comments:	No literature regarding its use in the PD population. Measures of time are more precise (5x sit to stand, 10x sit to stand) then counting of				

	repetitions within a particular time frame (30 second sit to stand; 10 second sit to stand). Individuals who are weak however may not be able to complete the requisite number of repetitions in a pre set amount of time may be preferable for certain populations.				
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**	In context with variations in other sit to stand tests
		X		x	
Research Use	**YES**		**NO**		**Comments**
Is this tool appropriate for use in intervention research studies?			X		Not to be used in PD related research secondary to a lack of literature supporting its use in the PD population

REFERENCES

Jones, CJ et al (1999). "A 30-s chair-stand test as a measure of lower body strength in community-residing older adults." Research Quarterly for Exercise and Sport. 70(2): p113-119

MacFarlane, DJ et al (2006). "Validity and normative data for thirty second chair stand test in elderly community dwelling hong kong chinese." American Journal of Human Biology. 18: p418-421.

McCarthy, E et al (2004). "Repeated chair stands as a measure of lower limb strength in sexagenarian women." Journal of Gerontology: Medical Sciences. 59A(11): p1207-1212.

Parkinson Edge Outcome Measures Taskforce

Instrument name: 360° Turn Test	
Reviewer: Terry Ellis PT, PhD, NCS; Laura Savella Spt and Jeffrey Hoder	**Date of review:** 4/30/2013

ICF domain (check all that apply):

_____ Body structure _____ Body function _X_ Activity _____ Participation ____ Environment

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:	_X_Balance/falls ___Bed mobility ___Gait (include stairs) _X_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:

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I		**X**			Good psychometric properties and excellent clinical utility of this measure in H&Y Stage 1. Lacking some information on validity and reliability.
II		**X**			Good psychometric properties and excellent clinical utility of this measure in H&Y Stage 2. Lacking some information

					on validity and reliability.
III		**X**			Good psychometric properties and excellent clinical utility of this measure in H&Y Stage 3. Lacking some information on validity and reliability.
IV			**X**		No studies on this measure have included H&Y Stages 4.
V			**X**		No studies on this measure have included H&Y Stages 5.
Overall Comments:	The existing evidence offers some normative data in both healthy elders and persons with PD, evidence of acceptable test-retest reliability in PD, and convergent validity of the test with the Continuous Scale Physical Functional Exam (CS-PFP) in PD. The psychometric data applies to patients in H&Y Stages 1-3. No studies on this measure have included H&Y Stages 4 or 5.				

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 360 Degree Turn Test is part of the Berg Balance Test, which students will learn to administer. Although there are a limited number of studies in persons with PD, the available evidence suggests that the psychometric properties of the 360 Degree Turn Test are adequate.
		X		X	
Research Use	**YES**		**NO**		**Comment**
Is this tool appropriate for use in intervention research studies?			X		At present more evidence is needed on the psychometric properties of the 360 Degree Turn Test, including its validity, reliability, and responsiveness in subjects with PD before it should be

			used as an independent assessment of dynamic balance.

REFERENCES

Berg K. Measuring balance in the elderly: preliminary development of aninstrument. *Physiotherapy Canada*. 1989; 41(6):304–311.

Dai B, Ware WB, Giuliani C. A structural equation model relating physicalfunction, pain, impaired mobility (IM), and falls in older adults. *Archives of Gerontology and Geriatrics*. 2012;55(3):645–52.

Dite W, Temple VA. Development of a clinical measure of turning for older adults. 2002;81(11):857-866.

Gill TM, Williams CS, Tinetti ME. Assessing risk for the onset of functional dependence among older adults: the role of physical performance. *Journal of the American Geriatrics Society*. 1995;43:603–9.

Gill TM, Williams CS, Mendes de Leon CF, Tinetti ME. The role of change in physical performance in determining risk for dependence in activities of daily living among nondisabled community-living elderly persons. *Journal of Clinical Epidemiology*. 1997;50(7):765–72.

Lipsitz LA, Jonsson PV, Kelley MM, Koestner JS. Causes and correlates of recurrent falls in ambulatory frail elderly. *Journal of Gerontology*. 1991;46(4):M114–22.

Schenkman M, Cutson TM, Chandler J, Pieper C, Pieper C. Reliability of Impairment and Physical Performance Measures for persons with Parkinson's disease. *Phys Ther*. 1997;77:19–27.

Schenkman M, Cutson TM, Kuchibhatla M, Scott BL, Cress ME. Application of the Continuous Scale of Physical Functional Performance. 2002;26(3):130–138.

Schenkman M. Profile of functional limitations and task performance among people with early- and middle-stage Parkinson disease. *Phys Ther*. 2011;91(9):1339–1354.

Shubert TE, Schrodt LA, Mercer VS, Busby-Whitehead J, Giuliani CA. Are scores on balance screening tests associated with mobility in older adults? *Journal of Geriatric Physical Therapy* 2006;29:35–9.

Tager IB, Swanson A, Satariano WA. Reliability of physical performance and self-reported functional measures in an older population. *The Journals of Gerontology. Series A, Biological Sciences and Medical Sciences*. 1998;53(4), 295–300.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Activities Specific Balance Confidence (ABC) Scale	
Reviewer: Erin Hussey and Cathy Harro	**Date of review:** May 2013

ICF domain (check all that apply):

_____ Body structure ___ Body function __X _ Activity ___ Participation ___ Environment

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:	_X__Balance/falls ___Bed mobility _X__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 _X__Reintegration to community ___Role function ___Shopping ___Social function ___Work ___Other:

Link to rehabmeasures.org summary:

Recommendation Categories

Hoehn and Yahr stage	**4**	**3**	**2**	**1**	**Comments**
I		**X**			Demonstrated in small subset of samples that included Hoehn Yahr Stage I
II		**X**			Demonstrated good psychometrics and good clinical utility in target population
III		**X**			Demonstrated good psychometrics and good clinical utility in target population
IV			**X**		Insufficient data in target population at this Hoehn Yahr Stage to recommend.

V				**X**	Insufficient data representing use in this Hoehn Yahr stage; Items represent activities that are not completed in this stage.
Overall Comments:	Good psychometrics to support use with individuals in early to middle stages of Parkinson disease. Good clinical utility with completion either independent by clients or administered within 20 minutes. For optimal results, examiner administration is recommended with clients for whom comprehension of the tool is questionable.				
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				

REFERENCES

Dal Bello-Haas, V., Klassen, L., et al. (2011). "Psychometric Properties of Activity, Self-Efficacy, and Quality-of-Life Measures in Individuals with Parkinson Disease." Physiotherapy Canada 63(1): 47-57.

Filiatrault, J., Gauvin, L., et al. (2007). "Evidence of the psychometric qualities of a simplified version of the Activities-specific Balance Confidence scale for community-dwelling seniors." Archives of Physical Medicine and Rehabilitation 88(5): 664-672.

Hatch, J., Gill-Body, K. M., et al. (2003). "Determinants of balance confidence in community-dwelling elderly people." Physical Therapy 83(12): 1072-1079.

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

Huang, T. T. and Wang, W. S. (2009). "Comparison of three established measures of fear of falling in community-dwelling older adults: psychometric testing." International Journal of Nursing Studies 46(10): 1313-1319. Find it on PubMed

Lajoie, Y. and Gallagher, S. P. (2004). "Predicting falls within the elderly community: comparison of postural sway, reaction time, the Berg balance scale and the Activities-specific Balance Confidence (ABC) scale for comparing fallers and non-fallers." Archives of Gerontology and Geriatrics 38(1): 11-26.

Landers, M. R., Durand, C., et al. (2011). "Development of a scale to assess avoidance behavior due to a fear of falling: the Fear of Falling Avoidance Behavior Questionnaire." Physical Therapy 91(8): 1253-1265.

Lohnes, C. A., & Earhart, G. M. (2010). External validation of abbreviated versions of the activities-specific balance confidence scale in Parkinson's disease. Movement Disorders, 25(4), 485-489.

Mak M, Pang M, Mok V (2012). Gait difficulty, postural instability, and muscle weakness are associated with fear of falling in people with Parkinson's Disease. Parkinson's Disease. 2012:1-5.

Mak M.K.Y. and Pang M.Y.C. (2009) Balance confidence and functional mobility are independently associated with falls in people with PD. Journal of Neurology. 256:742-749

Mak M. K. Y. and Pang, M. Y. C. (2009). Fear of falling is independently associated with recurrent falls in patients with Parkinson's disease: a 1-year prospective study. Journal of Neurology. 256 (10):1689–1695.

Nemmers, T. M. and Miller, J. W. (2008). "Factors influencing balance in healthy community-dwelling women age 60 and older." J Geriatr Phys Ther 31(3): 93-100.

Peretz, C., Herman, T., Hausdorff, J. M., & Giladi, N. (2006). Assessing fear of falling: Can a short version of the Activities-specific Balance Confidence scale be useful? Movement Disorders, 21(12), 2101-2105.

Powell, L. E. and Myers, A. M. (1995). "The Activities-specific Balance Confidence (ABC) Scale." Journals of Gerontology. Series A, Biological Sciences and Medical Sciences 50A(1): M28-34.

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): 733-746.

Talley, K. M., Wyman, J. F., et al. (2008). "Psychometric properties of the activities-specific balance confidence scale and the survey of activities and fear of falling in older women." Journal of the American Geriatrics Society 56(2): 328-333.

Wrisley, D. M. and Kumar, N. A. (2010). "Functional gait assessment: concurrent, discriminative, and predictive validity in community-dwelling older adults." Physical Therapy 90(5): 761-773.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Berg Balance Scale	
Reviewer: Deb Kegelmeyer and Alicia Esposito	**Date of review: 3/6/13**

ICF domain (check all that apply):

_____ Body structure __ Body function __X___ Activity _____ Participation ____ environment

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:	_x__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:

Recommendation Categories

Hoehn and Yahr stage	**4**	**3**	**2**	**1**	**Comments**
I				**x**	Ceiling effects noted
II	**x**				
III	**x**				
IV				**x**	Questionable use due to no assistive device can be used.
V				**X**	Cannot be used
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				

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.

Berg, K. O., Maki, B. E., et al. (1992). "Clinical and laboratory measures of postural balance in an elderly population." Arch Phys Med Rehabil 73(11): 1073-1080.

Berg, K. O., Wood-Dauphinee, S. L., et al. (1992). "Measuring balance in the elderly: validation of an instrument." Can J Public Health 83 Suppl 2: S7-11.

Conradsson, M., Lundin-Olsson, L., et al. (2007). "Berg balance scale: intrarater test-retest reliability among older people dependent in activities of daily living and living in residential care facilities." Physical Therapy 87(9): 1155-1163.

Donoghue, D. and Stokes, E. K. (2009). "How much change is true change? The minimum detectable change of the Berg Balance Scale in elderly people." J Rehabil Med 41(5): 343-346.

Franchignoni, F., Martignoni, E., et al. (2005). "Balance and fear of falling in Parkinson's disease." Parkinsonism Relat Disord 11(7): 427-433.

Leddy, A. L., Crowner, B. E., et al. (2011). "Functional gait assessment and balance evaluation system test: reliability, validity, sensitivity, and specificity for identifying individuals with Parkinson disease who fall." Physical Therapy 91(1): 102-113.

Scalzo, P. L., Nova, I. C., et al. (2009). "Validation of the Brazilian version of the Berg balance scale for patients with Parkinson's disease." Arquivos de Neuro-Psiquiatria 67(3B): 831-835.

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): 733-746.

Steffen, T. M., Hacker, T. A., et al. (2002). "Age- and gender-related test performance in community-dwelling elderly people: Six-Minute Walk Test, Berg Balance Scale, Timed Up & Go Test, and gait speeds." Physical Therapy 82(2): 128-137.

Wood-Dauphinee, S., Berg, K., et al. (1996). "The balance scale: responsiveness to clinically meaningful changes." Canadian Journal of Rehabilitation 10: 35-50.

Parkinson Edge Outcome Measures Taskforce

Instrument name: BESTest	
Reviewer: Cathy Harro and Erin Hussey	**Date of review:** June, 2013

ICF domain (check all that apply):

____ Body structure X_ Body function X_ Activity ___ Participation ___ Environment

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 _X_Dual Tasks ___Fatigue ___Flexibility ___Muscle performance ___Muscle tone / spasticity ___Pain _X_Sensory integration ___Somatosensation _X_Other: Other: balance motor strategies	_X_Balance/falls ___Bed mobility _X_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:

Recommendation Categories

Hoehn and Yahr stage	**4**	**3**	**2**	**1**	**Comments**
I		**X**			Excellent psychometrics AND good clinical utility.
II		**X**			Excellent psychometrics AND good clinical utility.
III		**X**			Excellent psychometrics AND good clinical utility.

IV		**X**			Excellent psychometrics AND good clinical utility.
V				**X**	This H & Y stage was not assessed in research; as functional level is too low for the designed balance test.
Overall Comments:	Excellent test-retest and inter-rater reliability for total BESTest scores. Excellent concurrent and discriminative validity. Adequate predictive validity for fall risk (retrospective and prospective -6month).				
Overall Comments:	Good Clinical Utility: Requires 30 minutes to administer test for trained raters. Training DVD available for purchase.				

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**	Clinical utility >30 minutes to administer. Shortened version of test (Mini BEST) is published with strong psychometrics and better clinical utility (15 min. to administer). Expose students to original text to understand subsections and face validity.
		X		X	

Research Use	**YES**	**NO**	**Comments**
Is this tool appropriate for use in intervention research studies?	X		Excellent psychometrics: reliability, validity, predictive validity without floor or ceiling effects in PD population. Further studies are needed to determine responsiveness of this measure for assessing clinically meaningful change in balance.

REFERENCES

Duncan RP, Leddy AL et al. (2013); Comparative utility of the BESTest, Mini-BESTest, and Brief BESTest for predicting falls in individuals with Parkinson's disease: A Cohort Study. Physical Therapy. 93(4):542-50

Duncan RP, Leddy AL, Cavanaugh JT et al (2012). Accuracy of fall prediction in Parkinson Disease: 6-month and 12-month prospective analyses. Parkinsons Disease. ID: 237673

Franchignoni, F., Horak, F., et al. (2010). "Using psychometric techniques to improve the Balance Evaluation System's Test: the mini-BESTest." Journal of rehabilitation medicine: official journal of the UEMS European Board of Physical and Rehabilitation Medicine 42(4): 323.

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

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

Leddy, A. L., Crowner, B. E., et al. (2011). "Functional gait assessment and balance evaluation system test: reliability, validity, sensitivity, and specificity for identifying individuals with Parkinson disease who fall." Phys Ther 91(1): 102-113.

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(2): 90-97.

Padgett PK, Jacobs JV, Kasser SL (2012). Is the BESTest at its Best? A suggested brief version based on interrater reliability, validity, internal consistency, and theoretical construct. Phys Ther 92: 1197-1207

Parkinson Edge Outcome Measures Taskforce

Instrument name: Brief BESTest	
Reviewer: Cathy Harro and Erin Hussey	**Date of review:** May, 2013

ICF domain (check all that apply):

____ Body structure _X_ Body function _X _ Activity ___ Participation ___ Environment

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 _X_Sensory integration ___Somatosensation _X_Other: Postural control strategies	_X_Balance/falls ___Bed mobility _X_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:

Recommendation Categories

Hoehn and Yahr stage	**4**	**3**	**2**	**1**	**Comments**
I		**X**			Excellent clinical utility. Limited number of studies in PD but good initial test psychometrics. Lacking any data on test retest reliability, concurrent validity, or responsiveness of measure.
II		**X**			Excellent clinical utility; good test psychometrics in few published studies.

					(see above, stage I)
III		**X**			Excellent clinical utility; good test psychometrics in few published studies. (see above, stage I)
IV		**X**			Excellent clinical utility; good test psychometrics in few published studies. (see above, stage I)
V				**X**	Lack of any research for this stage; functional level may be too low for balance activities on the test.
Overall Comments:	Excellent clinical utility: takes only 10 minutes to administer with minimal training required. Test Psychometrics: Significantly less research on this version than on the Mini BESTest or full version BESTest. Adequate ability to predict fallers. Lacking research on concurrent or discriminative validity and test responsiveness.				
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**	PD EDGE recommends MiniBEST over this Brief BESTest, based on stronger test psychometrics and more extensively researched.
		X		X	
Research Use	**YES**		**NO**		**Comments**
Is this tool appropriate for use in intervention research studies?	X				Test has excellent construct validity, internal consistency, and inter-rater reliability; however research is lacking regarding responsiveness as a balance outcome measure.

REFERENCES

Duncan RP, Leddy AL et al. (2013); Comparative utility of the BESTest, Mini-BESTest, and Brief BESTest for predicting falls in individuals with Parkinson's disease: A Cohort Study. Phys Ther

Padgett PK, Jacobs JV, Kasser SL (2012). Is the BESTest at its Best? A suggested brief version based on interrater reliability, validity, internal consistency, and theoretical construct. Phys Ther 92: 1197-1207

Parkinson Edge Outcome Measures Taskforce

Instrument name: Continuous Scale Physical Functional Performance	
Reviewer: Terry Ellis PT, PhD, NCS; Laura Savella sPT and Jeffrey Hoder	**Date of review:** 4/30/2013

ICF domain (check all that apply):

_____ Body structure _____ Body function __X__ Activity __X__ Participation ___ Environment

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 _X_Flexibility _X_Muscle performance ___Muscle tone / spasticity ___Pain ___Sensory integration ___Somatosensation ___Other:	_X_Balance/falls ___Bed mobility _X_Gait (include stairs) _X_High Level mobility ___Transfers ___Wheelchair skills ___Other:	___Community function ___Driving ___Health and wellness _X_Home management ___Leisure/Recreational activities ___Life satisfaction ___Quality of life _X_Reintegration to community _X_Role function ___Shopping ___Social function ___Work ___Other:

Link to rehabmeasures.org summary:

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I		**X**			Excellent validity and reliability in this population. Limited by extensive time needed to administer CS-PFP
II		**X**			Excellent validity and reliability in this population. Limited by extensive time needed to administer CS-PFP
III		**X**			Excellent validity and reliability in this

					population. Limited by extensive time needed to administer CS-PFP
IV			**X**		No studies tested the CS-PFP on subjects in H&Y Stage IV
V			**X**		No studies tested the CS-PFP on subjects in H&Y Stage V

Overall Comments:	The CS-PFP requires patients to carry out "real life" everyday functional tasks, typically performed in the home environment, optimizing its ecological validity. For this reason, it may be considered a reasonable option to measure tasks at the Participation Level. The CS-PFP has excellent validity and reliability, as well as evidence suggesting its sensitivity to changes in function in Parkinson's Disease: H&Y Stages 1-3. No studies have tested its validity and reliability in H&Y stages 4 and 5. The CS-PFP has limited clinical utility based on the extensive list of equipment required (much of which must be standardized in size, weight, etc.) and the space demands (ex. washing machine and dryer), the cost of training for use of this tool, and the long time administration of this test takes in a population with Parkinson's disease (45-70 minutes) (Schenkman et al, 2002) or 40-60 min (Hearty et al, 2007). The short form CS-PFP10 has not yet been examined in a population with Parkinson's disease, but the shorter time of administration for populations of older adults (30 minutes) may make this a more useful clinical measure in the PD population. Although the CS-PFP is an excellent test of participation with strong ecological validity; it is time consuming and has considerable requirements for equipment and space. Therefore, it is not recommended in the PD core set of measures.

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 be exposed to this tool given its strong psychometric properties in the elderly population and in persons with Parkinson's disease. In addition, it is a potentially valuable tool to assess tasks at the
		X		X	

					Participation Level. However, given the formal training, equipment, and space requirements it may not be feasible to learn to administer in the academic setting.
Research Use	**YES**		**NO**		**Comments**
Is this tool appropriate for use in intervention research studies?	X				The CS-PFP has excellent validity and reliability, as well as evidence suggesting its sensitivity to changes in function in Parkinson's Disease: H&Y Stages 1-3. The CS-PFP is appropriate to use in research studies, where its cost, the time it takes to administer, and the training requirements may be less prohibitive. It is comprehensive in nature and has strong ecological validity.

REFERENCES

Arnett SW, Laity JH, Agrawal SK, Cress ME. Aerobic reserve and physical functional performance in older adults. Age and Ageing. 2008;37(4):384–9.

Cress M. Quantifying physical functional performance in older adults. Muscle & nerve. 1997; S17–S20.

Cress M. Exercise: Effects on physical functional performance in independent older adults. Journal of Gerontology. 1999; 54A(5):M242–M248.

Cress M, Buchner D. Continuous-scale physical functional performance in healthy older adults: a validation study. Arch Phys Med Rehabil, 1996;77:1243-1250.

Cress MS, Meyer M. Maximal voluntary and functional performance levels needed for independence in adults aged 65 to 97 years. Phys Ther. 2003;83(1):37-48.

Cress ME, Petrella JK, Moore TL, Schenkman ML. Continuous-scale physical functional performance test: validity, reliability, and sensitivity of data for the short version. Phys Ther. 2005. 85(4):323–35.

Frisard M, Fabre JM, Russell RD, et al. Physical activity level and physical functionality in nonagenarians compared to individuals aged 60-74 years. J Gerontol A Biol Sci Med Sci. 2007;62(7):783–788.

Hearty TM, Schenkman ML, Kohrt WM, Cress ME. Continuous scale physical functional performance test: appropriateness for middle-aged adults with and without Parkinson's disease. Journal of neurologic physical therapy:JNPT. 2007;31(2):64-70.

Schenkman M, Cutson TM, Kuchibhatla M, Scott BL, Cress ME. Application of the Continuous Scale of Physical Functional Performance. Neurology Report. 2002;26(3), 130-138.

Schenkman M, Ellis T, Christiansen C, et al. Profile of functional limitation and task performance among people with early- and middle- stage Parkinson disease. Phys Ther. 2011; 91(9):1339-1354

Schenkman M, Hall D, Kumar R, Kohrt WM. Endurance exercise training to improve economy of movement of people with Parkinson disease: three case reports. Phys Ther. 2008;88(1):63–76.

Schenkman M, Hall DA, Barón AE, Schwartz RS, Mettler P, Kohrt WM. Exercise for people in early- and mid-stage Parkinson disease: a 16-month randomized controlled trial. Phys Ther. 2012;92(11): 1395–1410.

Parkinson Edge Outcome Measures Taskforce

Instrument name: CTSIB - Clinical Test of Sensory Integration and Balance	
Reviewer: Deb Kegelmeyer and Alicia Esposito	**Date of review:** May 2013

ICF domain (check all that apply):

_____ Body structure __x___ Body function __ ___ Activity _____ Participation ____ environment

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 _x__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:

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I				**x**	1 study – no difference between PD and controls
II				**x**	
III				**x**	1 study poor results, 1 study ok results
IV			**x**		
V				**x**	Floor effect, they cant do it.
Overall Comments:	Overall not separate PD from healthy age matched controls except in H&Y stage IV				

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		

REFERENCES

Chong RKY, Horak FB, Frank J, Kaye J (1999). “Sensory Organization for Balance: Specific Deficits in Alzheimer’s but not in Parkinson’s Disease. J. of Gerontology 54A(3):M122-M128.

Cohen, H., Blatchly, C. A., et al. (1993). "A study of the clinical test of sensory interaction and balance." Physical Therapy 73(6): 346-351; discussion 351-344.

Colnat-Coulbois S, Gauchard GC, Maillard L, Barroche G, Vespignani H, Auque J, Perrin PP (2011). “Management of Postural Sensory Conflict and Dynamic Balance Control in Late-stage Parkinson’s Disease.” Neuroscience 193:363-369.

Frenklach, A., Louie, S., Koop, M. M. and Bronte-Stewart, H. (2009), Excessive postural sway and the risk of falls at different stages of Parkinson's disease. Mov. Disord., 24: 377–385.

Landers MR, Backhund A, Davenport J, Fortune J, Schuerman S, Altenburger P (2008). “Postural Instability in Idiopathic Parkinson’s Disease: Discriminating Fallers form Nonfallers Based on Standardized Clinical Measures”. JNPT 32(6):56-61.

Rossi M, Soto A, Santos S, Sesar A, Labella T. 2009. “A prospective study of alterations in balance among patients with Parkinson's Disease.” Eur Neurol. 61:171-6.

Shumway-Cook, A. and Horak, F. B. (1986). "Assessing the influence of sensory integration on balance. Suggestions from the field." Physical Therapy 66: 1548-1549.

Whitney, S. L. and Wrisley, D. M. (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.

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.

Wrisley, D. M. and Whitney, S. L. (2004). "The effect of foot position on the modified clinical test of sensory interaction and balance." Arch Phys Med Rehabil 85(2): 335-338.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Dynamic Gait Index	
Reviewer: Cathy Harro and Erin Hussey	**Date of review:** 6/12/2013
ICF domain (check all that apply): _____ Body structure __ _ Body function __X_ Activity _____ Participation ____ environment	

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 _x_Dual Tasks ___Fatigue ___Flexibility ___Muscle performance ___Muscle tone / spasticity ___Pain _x_Sensory integration ___Somatosensation _x_Other: balance motor strategies	_x_Balance/falls ___Bed mobility _x_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:

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I	**X**				Excellent psychometrics AND excellent clinical utility; Note small % of participants across research studies were in stage I, therefore unclear if ceiling effect.
II	**X**				Excellent psychometrics AND excellent clinical utility

III	**X**				Excellent psychometrics AND excellent clinical utility
IV	**X**				Excellent psychometrics AND excellent clinical utility; small % of participants across studies were in stage IV, therefore unclear if floor effect
V				**NA**	This H Y stage not assessed in research; may be too low level for the designed balance test
Overall Comments:	Psychometrics: Excellent test-retest in PD population; inter-rater reliability not tested in PD but excellent in stroke, MS, CDE. Excellent validity to detect fallers from non-fallers in multiple PD studies. Excellent concurrent validity with standardized balance measures in stroke and MS populations (Berg, ABC, Timed Walk tests), but not assessed in PD. Adequate concurrent validity with disease severity (UPDRS-motor). Established MDC in PD (2.9pts) but no MCID. Adequate discriminative ability to detect fallers from nonfallers based on established Cutoff score 19/24 across multiple studies. Measure is responsive to change following treadmill locomotor training and RAC cued step training with moderate effect size. Unclear if ceiling or floor effects for those with PD in stage 1 and 4 respectively but not evident in stages 2-3.				
Overall Comments:	Excellent Clinical Utility: Requires 10 minutes to administer test for trained raters. No specialized training is required except for review of test administration procedures and standardized scoring. Equipment readily available in the clinic to administer the text. No fee for use of this test. NOTE: Unclear if DGI vs FGA is more sensitive and responsive test in PD population at this time. More research has examined psychometrics of DGI in PD than FGA; however Face validity of FGA reflects 3 new items that may be reflective of balance problems during mobility in PD (walking on line, walking backward, and walking with eyes closed). Further research is needed to determine which measure is more responsive to severity of disease and to measure responsiveness to rehabilitation interventions.			
Entry-Level Criteria	**Students should learn**	**Students should be exposed to tool (e.g.**	**Comments**		

	to administer tool		to read literature)		
Should this tool be required for entry level curricula?	**YES**	**NO**	**YES**	**NO**	Clinical utility 10 minutes to administer. Original version of Functional Gait Assessment. Has strong psychometric properties across multiple studies in PD.
		X		X	
Research Use	**YES**		**NO**		**Comments**
Is this tool appropriate for use in intervention research studies?	X				Excellent psychometrics: reliability, validity, predictive validity especially related to fall risk in PD population. A few studies on responsiveness support this as a sensitive measure to change in balance following mobility or gait interventions.

REFERENCES

Cakit, B. D., Saracoglu, M., et al. (2007). "The effects of incremental speed-dependent treadmill training on postural instability and fear of falling in Parkinson's disease." Clin Rehabil 21(8): 698-705.

Dibble LE, Lange M. (2006). Predicting falls in individuals with Parkinson Disease: a reconsideration of clinical balance measures. JNPT 30 (2): 60-66

Dibble LE, Christensen J, Ballard DJ, Foreman KB (2008). Diagnosis of fall rsik in Parkinson Disease: An analysis of individual and collective clinical balance test interpretation. Phys Ther 88 (3): 323-332

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(1): 114-121.

Jonsson, L. R., Kristensen, M. T., et al. (2011). "Intra- and interrater reliability and agreement of the Danish version of the Dynamic Gait Index in older people with balance impairments." Archives of Physical Medicine and Rehabilitation 92(10): 1630-1635.

Kadivar A, Corcos DM, FOto J, Hondzinski JM. (2011). Effect of step training and rhythimic auditory stimulation on functional performance in Parkons Patients. Neurorehabilitation Neural Repair 25 (7): 626-635

Landers, M. R., Backlund, A., et al. (2008). "Postural instability in idiopathic Parkinson's disease: discriminating fallers from nonfallers based on standardized clinical measures." J Neurol Phys Ther 32(2): 56-61. F

Romero, S., Bishop, M. D., et al. (2011). "Minimum detectable change of the Berg Balance Scale and Dynamic Gait Index in older persons at risk for falling." Journal of Geriatric Physical Therapy 34(3): 131-137.

Shumway-Cook, A., Baldwin, M., et al. (1997). "Predicting the probability for falls in community-dwelling older adults." Physical Therapy 77(8): 812-819.

Shumway-Cook, A., Gruber, W., et al. (1997). "The effect of multidimensional exercises on balance, mobility, and fall risk in community-dwelling older adults." Physical Therapy 77(1): 46-57.

Tinetti, M. E. (1986). "Performance-oriented assessment of mobility problems in elderly patients." Journal of the American Geriatrics Society 34(2): 119-126.

Tinetti, M. E., Mendes de Leon, C. F., et al. (1994). "Fear of falling and fall-related efficacy in relationship to functioning among community-living elders." Journal of Gerontology 49(3): M140-147.

Vereeck, L., Wuyts, F., et al. (2008). "Clinical assessment of balance: normative data, and gender and age effects." Int J Audiol 47(2): 67-75.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Functional Axial Rotation (FAR)	
Reviewer: Erin Hussey and Cathy Harro	**Date of review:** May, 2013

ICF domain (check all that apply):

__X__ Body structure ___ Body function __ _ Activity ___ Participation ___ Environment

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 _x__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:

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I			**X**		Good reliability, but has insufficient data and consistency of administration to recommend
II			**X**		Good reliability, but has insufficient data and consistency of administration to recommend
III			**X**		Good reliability, but has insufficient data and consistency of administration to

					recommend
IV			**X**		Good reliability, but has insufficient data and consistency of administration to recommend
V				**X**	No data for this Hoehn Yahr stage
Overall Comments:	Tool has been reported in research using varied methods of data summary reported by the originator and other variations specific to assessment of functional neck and trunk flexibility reported by authors who have not adopted this technique. Clinical Utility: requires acquisition of marked measuring hoop and stabilizing base. Measure can be completed within 5-10 minutes of set-up.				
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**	The construct of measuring spinal ROM is valuable for students; the method for flexibility assessment using this specific tool has insufficient psychometric data or consistency at this time to recommend for entry level.
		X		X	
Research Use	**YES**		**NO**		**Comments**
Is this tool appropriate for use in intervention research studies?			X		

REFERENCES

Schenkman M, Hughes MA, Bowden, MG, Studenski SA (1995). A clinical tool for measuring functional axial rotation. *Phys Ther, 75*(2), 151-156.

Schenkman ML, Clark K, Xie T, Kuchibhatla M, Shinberg M, Ray L (2001). Spinal movement and performance of a standing reach task in participants with and without Parkinson disease. Phys Ther. 81:1400 –1411.

Schenkman ML, Cutson TM, Kuchibhatla M, et al. (1997) Reliability of impairment and physical performance measures for persons with Parkinson's disease. Phys Ther. 77:19 –27.

Schenkman ML, Morey M, Kuchibhatla M. (2000). Spinal flexibility and balance control among community-dwelling adults with and without Parkinson's disease. J Gerontol A Biol Sci Med Sci. 55:M441–M445.

Schenkman M, Ellis T, Christiansen C, et al. (2011). Profile of functional limitations and task performance among people with early- and middle-stage Parkinson disease. Phys Ther. 91:1339 –1354.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Falls Efficacy Scale	
Reviewer: Erin Hussey	**Date of review: May, 2013**

ICF domain (check all that apply):

____ Body structure ___ Body function __X _ Activity ___ Participation ___ Environment

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:	__X_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:

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I				**X**	Unable to recommend on the basis of current evidence in published literature.
II				**X**	Unable to recommend on the basis of current evidence in published literature.
III				**X**	Unable to recommend on the basis of current evidence in published literature.
IV				**X**	Unable to recommend on the basis of

					current evidence in published literature.
V				**X**	Not represented at Stage V
Overall Comments:	Psychometrics: Some evidence of responsiveness to intervention but mixed evidence relative to distinguishing fallers from non-fallers at Hoehn & Yahr Stages 2 or 3. Multiple different variations of the Falls Efficacy Scale limit comparison across studies and too few studies available specific to the Tinetti FES 10-item version. The variations include number of items (ranging from 10 to 16) and rating scale.				
Overall Comments:	Clinical Utility: Good efficiency as patient questionnaire (5-15 minutes)				

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**	Unable to support at entry level for use with Parkinson disease based on current evidence and variability in format.
		X		X	
Research Use	**YES**		**NO**		**Comments**
Is this tool appropriate for use in intervention research studies?			X		

REFERENCES

Cakit BD, Saracoglu M, Genc H, Erdem HR. (2007). The effects of incremental speed-dependent treadmill training on postural instability and fear of falling in Parkinson's disease. Clinical Rehabilitation 21:698–705

Harada, N., Chiu, V., et al. (1995). "Screening for balance and mobility impairment in elderly individuals living in residential care facilities." Physical Therapy 75(6): 462.

Hellstrom, K. and Lindmark, B. (1999). "Fear of falling in patients with stroke: a reliability study." Clinical rehabilitation 13(6): 509.

Hotchkiss, A., Fisher, A., et al. (2004). "Convergent and predictive validity of three scales related to falls in the elderly." American Journal of Occupational Therapy 58(1): 100-103.

Huang, T. T. and Wang, W. S. (2009). "Comparison of three established measures of fear of falling in community-dwelling older adults: psychometric testing." International Journal of Nursing Studies 46(10): 1313-1319.

Parry, S. W., Steen, N., et al. (2001). "Falls and confidence related quality of life outcome measures in an older British cohort." Postgraduate Medical Journal 77(904): 103-108.

Powell, L. and Myers, A. (1995). "The activities-specific balance confidence (ABC) scale." The Journals of Gerontology: Series A 50(1): M28.

Rahman, S. S., Griffin, H. J., Quinn, N. P., & Jahanshahi, M. M. (2011). On the nature of fear of falling in Parkinson's disease. *Behavioural Neurology*, *24*(3), 219-228.

Tinetti, M., Richman, D., et al. (1990). "Falls efficacy as a measure of fear of falling." Journal of gerontology 45(6): P239.

Thomas AA, Rogers JM, Amick MM, Friedman JH (2010). Falls and the falls efficacy scale in Parkinson’s disease. Journal of Neurology. 257:1124–1128.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Functional Gait Assessment	
Reviewer: Cathy Harro and Erin Hussey	**Date of review:** May, 2013

ICF domain (check all that apply):

____ Body structure ___ Body function _X_ Activity ___ Participation ___ Environment

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 _X_Dual Tasks ___Fatigue ___Flexibility ___Muscle performance ___Muscle tone / spasticity ___Pain _X_Sensory integration ___Somatosensation _X_Other: balance motor strategies	_X_Balance/falls ___Bed mobility _X_ 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:

Recommendation Categories

Hoehn and Yahr stage	**4**	**3**	**2**	**1**	**Comments**
I	**X**				Excellent psychometrics AND excellent clinical utility; Note small % of participants across research studies were in stage I, therefore unclear if ceiling effect.
II	**X**				Excellent psychometrics AND excellent clinical utility.

III	**X**				Excellent psychometrics AND excellent clinical utility.
IV	**X**				Excellent psychometrics AND excellent clinical utility; small % of participants across studies were in stage IV, therefore unclear if floor effect.
V				**NA**	This H Y stage not assessed in research; stage V would have functional level too low to meet minimum criteria for this test.
Overall Comments:	Psychometrics: excellent reliability and concurrent validity with standardized balance and gait measures. Normative data published for healthy adults and elderly. Adequate predictive ability to identify prospective fallers (6 & 12 months). Good discriminative validity based on on vs. off medication state. Measure is responsive to change following dopamine replacement medications (large effect size). Unclear if ceiling or floor effects for those with PD in stage 1 and 4 respectively but not evident in stages 2-3. Further research is needed on FGA {MDC, fall risk prediction, responsiveness}.				

Overall Comments:	Excellent Clinical Utility: Requires 10 minutes to administer test for trained raters; however scoring criteria is more detailed and complex than DGI scoring. No specialized training is required except for review of test administration procedures and standardized scoring. NOTE: Unclear if DGI vs. FGA is more sensitive and responsive test in PD population at this time. Both tests have excellent psychometrics in PD. However, PD Edge task force is recommending FGA based on enhanced construct validity with revised tool and addition of 3 new test items that are reflective of balance deficits during mobility in PD (walking on line, walking backward, and walking with eyes closed). Further research is needed to determine which measure is more responsive to detect balance deficits across stages of disease and to measure responsiveness to rehabilitation interventions.				

Entry-Level Criteria	**Students should learn to administer**	**Students should be exposed to tool (e.g. to read literature)**	**Comments**

	tool				
Should this tool be required for entry level curricula?	**YES**	**NO**	**YES**	**NO**	Clinical utility 10 minutes to administer. Revised version of Dynamic Gait Index. Has strong psychometric properties across multiple studies in PD.
	X				
Research Use	**YES**		**NO**		**Comments**
Is this tool appropriate for use in intervention research studies?	X				Excellent psychometrics: reliability, validity, predictive validity especially related to fall risk in PD population. Only one study on responsiveness that support this as a sensitive measure to change in on vs. off levodopa medications. Further research needed on MDC and MCID in PD population.

REFERENCES

Duncan RP et al. (2012) Accuracy of fall prediction in Parkinson Disease: Six- month and 12-month prospective analyses. Parkinson's Disease Artcile ID 237673. Doi: 10.1155/201/237673

Ellis T, Cavanaugh JT, Earhart GM et al. (2011) Which measures of physical function and motor impairment best predict quality of life in Parkinson's Disease? Parkinsonism Relat Disord 17 (9): 693-697

Foreman KB, Addison O, Kim HS, Dibble LE. (2011)a Testing balance and fall risk in persons with Parkinson's disease, an argument for ecologically valid testing. Parkinsonism Relat Disord 17 (3): 166-171

Foreman KB et al (2011)b Improved dynamic postural task performance without improvements in postural responses: the blessing and the curse of dopamine replacement. Parkinson's Disease. Article ID 692150. Doi: 10.1155/2012/692150

Leddy, A. L., Crowner, B. E., et al. (2011). "Functional gait assessment and balance evaluation system test: reliability, validity, sensitivity, and specificity for identifying individuals with Parkinson disease who fall." Physical Therapy 91(1): 102-113.

Walker, M., Austin, A., et al. (2007). "Reference group data for the functional gait assessment." Physical Therapy 87(11): 1468.

Wrisley, D. M. and Kumar, N. A. (2010). "Functional gait assessment: concurrent, discriminative, and predictive validity in community-dwelling older adults." Physical Therapy 90(5): 761-773.

Wrisley, D. M., Marchetti, G. F., et al. (2004). "Reliability, internal consistency, and validity of data obtained with the functional gait assessment." Physical Therapy 84(10): 906-918.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Freezing of Gait Questionnaire	
Reviewer: Deb Kegelmeyer and Alicia Esposito	**Date of review:** May 2013

ICF domain (check all that apply):

_____ Body structure _____ Body function __x ___ Activity _____ Participation ____ environment

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 _x__Gait (include stairs) ___High Level mobility ___Transfers ___Wheelchair skills ___Other:	_x__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:

Recommendation Categories

Hoehn and Yahr stage	**4**	**3**	**2**	**1**	**Comments**
I					Not in studies
II		**x**			
III		**x**			
IV		**x**			
V					Not in studies
Overall Comments:	Gave 3 not 4 due to lack of correlation with other measures leading some to question validity though it is not agreed that it should correlate with those measures.				

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				

REFERENCES

Amboni, M., Cozzolino, A., et al. (2008). "Freezing of gait and executive functions in patients with Parkinson's disease." Mov Disord 23(3): 395-400.

Ellis, T., et al. "Which measures of physical function and motor impairment best predict quality of life in Parkinson's disease?." *Parkinsonism & Related Disorders*, v. 17 issue 9, 2011, p. 693-7.

Giladi, N., Shabtai, H., et al. (2000). "Construction of freezing of gait questionnaire for patients with Parkinsonism." Parkinsonism Relat Disord 6(3): 165-170.

Giladi, N., Tal, J., et al. (2009). "Validation of the freezing of gait questionnaire in patients with Parkinson's disease." Mov Disord 24(5): 655-661.

Gurevich, T. and Giladi, N. (2003). "Freezing of gait in multiple system atrophy (MSA)." Parkinsonism Relat Disord 9(3): 169-174.

Moore, O., Peretz, C., et al. (2007). "Freezing of gait affects quality of life of peoples with Parkinson's disease beyond its relationships with mobility and gait." Mov Disord 22(15): 2192-2195.

Nieuwboer, A., Kwakkel, G., et al. (2007). "Cueing training in the home improves gait-related mobility in Parkinson's disease: the RESCUE trial." Journal of Neurology, Neurosurgery & Psychiatry 78(2): 134-140.

Nieuwboer, A., Rochester, L., et al. (2009). "Reliability of the new freezing of gait questionnaire: agreement between patients with Parkinson's disease and their carers." Gait Posture 30(4): 459-463.

Nilsson, M. H. and Hagell, P. (2009). "Freezing of Gait Questionnaire: validity and reliability of the Swedish version." Acta Neurol Scand 120(5): 331-334.

Schaafsma, J. D., Balash, Y., et al. (2003). "Characterization of freezing of gait subtypes and the response of each to levodopa in Parkinson's disease." Eur J Neurol 10(4): 391-398.

Shine, JM., et al. “Assessing the utility of Freezing of Gait Questionnaires in Parkinson's Disease.” *Parkinsonism & Related Disorders*, v. 18 issue 1, 2012, p. 25-9.

Tan, DM., et al. “Freezing of gait and activity limitations in people with Parkinson's disease.” *Archives of Physical Medicine and Rehabilitation*, v. 92 issue 7, 2011, p. 1159-65.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Four Square Step Test	
Reviewer: Deb Kegelmeyer and Alicia Esposito	**Date of review:** 3/6/13

ICF domain (check all that apply):

_____ Body structure _____ Body function _x____ Activity _____ Participation ____ environment

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:	_x__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:

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I			**x**		Not studied but based on elderly and stroke should be useful
II		**x**			Only one study
III		**x**			Only one study
IV		**x**			Only one study
V				**x**	
Overall Comments:	One well done study, no MCID or MID and no SEM				

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				I'm not strongly recommending but I think it would be useful as long as there isn't anything better to measure multi-directional stepping in a functional way.

REFERENCES

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.

Duncan, RP and Earhart, G. (2013). "Four Square Step Test Performance in People With Parkinson Disease." Journal of Neurologic Physical Therapy 37(1): 2-8.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Fatigue Severity Scale	
Reviewer: Terry Ellis PT, PhD, NCS; Laura Savella sPT and Jeffrey Hoder	**Date of review:** 4/30/2013

ICF domain (check all that apply):

_____ Body structure _X_ Body function _____ Activity _____ Participation _____ environment

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 _X_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 _X_Health and wellness ___Home management ___Leisure/Recreational activities ___Life satisfaction ___Quality of life ___Reintegration to community _X_Role function ___Shopping _X_Social function ___Work ___Other:

Link to rehabmeasures.org summary:
http://www.rehabmeasures.org/Lists/RehabMeasures/PrintView.aspx?ID=1101

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I		**X**			Good Psychometric Properties and good clinical utility in PD
II		**X**			Good Psychometric Properties and good clinical utility in PD
III		**X**			Good Psychometric Properties and good clinical utility in PD

IV			**X**		Only one study of psychometrics for PD recruited pts in H&Y Stage 4 (n=3);
V			**X**		No studies in this H&Y stage
Overall Comments:	Although there is limited volume of research examining the psychometric properties of the FSS in persons with PD, those that have been published reveal adequate psychometric properties. Responsiveness to exercise interventions requires additional studies. At this point no studies examining psychometric properties included persons in H&Y Stage 5. One study examined psychometric properties in 3 persons H&Y Stage 4.				

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 Fatigue Severity Scale requires further study in persons with PD, but can be applied to several other diagnostic groups and therefore of value for students to learn to administer. It is quick and easy to implement with excellent clinical utility. There is currently no data on cut-off scores in PD and little normative data to guide a novice clinician in the interpretation of any score on the FSS.
		X		X	

Research Use	**YES**	**NO**	**Comments**
Is this tool appropriate for use in intervention research studies?	X		The Fatigue Severity Scale may be used in research studies to discriminate among patients with PD with and without fatigue. The FSS was responsive to pharmacological intervention (Mendonca et al,

			2007), but not exercise intervention (Winward et al, 2012)

REFERENCES

Garber CE and Friedman JH. Effects of fatigue on physical activity and function in patients with Parkinson's disease. *Neurology*. 2003;60(7):1119-1124.

Grace J, Mendelsohn A, et al. A comparison of fatigue measures in Parkinson's disease. *Parkinsonism Relat Disord*. 2007;13(7):443-445.

Goulart FO, Godke BA, Borges V, et al. Fatigue in a cohort of geriatric patients with and withouth Parkinson's disease. *Brazilian Journal of Medical and Biological Research.* 2009;42:77-775.

Hagell P, Hoglund A, et al. Measuring fatigue in Parkinson's disease: a psychometric study of two brief generic fatigue questionnaires. *J Pain Symptom Manage*. 2006;32(5):420-432.

Herlofson K, Larsen JP. The influence of fatigue on health-related quality of life in patients with Parkinson's disease. *Acta Neurol Scand*. 2003;107(1):1-6.

Friedman JH, Alves G, Hagell P, et al. Fatigue rating scales critique and recommendations by the Movement Disorders Society task force on rathing scales for Parkinson's Disease. *Mov Disord.* 2010;7:805-822.

Mendonca DA, Menenzes K, Jog MS. Methylphenidate improves fatigue scores in Parkinson disease: a randomized controlled trial. *Mov Disord.* 2007;22:2070-2076.

Valderramas S, Feres AC, et al. Reliability and validity study of a Brazilian-Portuguese version of the Fatigue Severity Scale in Parkinson's disease patients. *Arq Neuropsiquiatr*. 2012;70(7):497-500.

Winward C, Sackley C, MeekC, et al. Weekly exercise does not improve fatigue levels in Parkinson's disease. *Mov Disord.* 2012;27(1):143-146.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Functional Independence Measure	
Reviewer: Deb Kegelmeyer and Alicia Esposito	**Date of review:** May 2013

ICF domain (check all that apply):

_____ Body structure _____ Body function __ x___ Activity _____ Participation ____ environment

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 __x_Bed mobility _x__Gait (include stairs) ___High Level mobility _x__Transfers __x_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:

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I				**x**	No studies in PD
II				**x**	Only one subject in PD
III			**x**		
IV			**x**		
V			**x**		
Overall Comments:	Only normative data in the two studies on PD. Some issues noted in other neurologic populations in studies on them				

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		Utility not demonstrated in PD or strongly in some other studies

REFERENCES

Chiong, Y. and Lim, P. A. C. (2007). "Results from a prospective acute inpatient rehabilitation database: clinical characteristics and functional outcomes using the Functional Independence Measure." Ann Acad Med Singapore 36: 3-10.

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.

Cournan, M. (2011). "Use of the Functional Independence Measure for Outcomes Measurement in Acute Inpatient Rehabilitation." Rehabilitation Nursing 36(3): 111-117.

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.

Ellis, T., et al. "Effectiveness of an inpatient multidisciplinary rehabilitation program for people with Parkinson disease." *Physical Therapy*, v. 88 issue 7, 2008, p. 812-9.

Grey, N. and Kennedy, P. (1993). "The Functional Independence Measure: a comparative study of clinician and self ratings." Spinal Cord 31(7): 457-461.

Gurka, J. A., Felmingham, K. L., et al. (1999). "Utility of the functional assessment measure after discharge from inpatient rehabilitation." J Head Trauma Rehabil 14(3): 247-256.

Heinemann, A. W., Linacre, J. M., et al. (1994). "Prediction of rehabilitation outcomes with disability measures." Arch Phys Med Rehabil 75(2): 133-143.

Hobart, J., Lamping, D., et al. (2001). "Evidence-based measurement Which disability scale for neurologic rehabilitation?" Neurology 57(4): 639-644.

Keith, R. A., Granger, C. V., et al. (1987). "The functional independence measure: a new tool for rehabilitation." Adv Clin Rehabil 1: 6-18.

Kohler, F., Dickson, H., et al. (2009). "Agreement of functional independence measure item scores in patients transferred from one rehabilitation setting to another." European journal of physical and rehabilitation medicine.

Marciniak, CM., et al. “Do co-morbidities and cognition impact functional change and discharge needs in Parkinson disease?.” *American Journal of Physical Medicine & Rehabilitation*, v. 90 issue 4, 2011, p. 272-80.

Nilsson, Å. L., Sunnerhagen, K. S., et al. (2005). "Scoring alternatives for FIM in neurological disorders applying Rasch analysis." Acta neurologica scandinavica 111(4): 264-273.

Ottenbacher, K. J., Hsu, Y., et al. (1996). "The reliability of the functional independence measure: a quantitative review." Arch Phys Med Rehabil 77(12): 1226-1232.

Pollak, N., Rheault, W., et al. (1996). "Reliability and validity of the FIM for persons aged 80 years and above from a multilevel continuing care retirement community." Arch Phys Med Rehabil 77: 1056-1061.

Stineman, M. G., Shea, J. A., et al. (1996). "The Functional Independence Measure: tests of scaling assumptions, structure, and reliability across 20 diverse impairment categories." Archives of Physical Medicine and Rehabilitation 77(11): 1101-1108.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Functional Reach	
Primary Reviewer: Rosemary Gallagher, PT, DPT, GCS **Secondary Reviewer:** Suzanne O' Neil, T, DPT, NCS	**Date of review:** 4/2013

ICF domain (check all that apply):

_____ Body function/structure ___X__ 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:	_X__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:

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I				**X**	
II		**X**			
III		**X**			
IV			**X**		Need more psychometrics in this stage
V				**X**	Not assessed in this group
Overall Comments:	• The FR and the UPDRS show a low correlation: association: ($\varnothing$ = 0.39) significance: (X^2 (1) = 2.967) and therefore measure				

	different constructs. The FRT, in comparison to the UPDRS may be more useful in predicting the risk of postural instability during daily activity. (Jenkins et al. (2010) *Parkinsonism and Related Disorders*, 16; 409-41). • The FR showed only moderate sensitivity (.52) and specificity (.53) in discriminating between PD fallers and non-fallers (Kerr et al. (2010) *Neurology*, 75;116-124) • Behrman et al. (2002) concluded that the FRT is effective in differentiating subjects with PD with and without a fall history, and also subjects with PD and a fall history, from healthy adults.				
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 FRT is a useful measure for use in people with PD both in the clinical and research setting. It is recommended that students be exposed to this measure. In a clinical setting the FR was found to be a good option to assess balance in terms of time and ease of administration. Tanji et al (2008) Mo'vt disorders, 23:13; 1897-1905.
		X		X	
Research Use	**YES**		**NO**		**Comments**
Is this tool appropriate for use in intervention research studies?	X				

References

Behrman, A. L., Light, K. E., et al. (2002). "Is the functional reach test useful for identifying falls risk among individuals with Parkinson's disease?" Archives of Physical Medicine and Rehabilitation 83(4): 538-542.

Dibble, L. E. and Lange, M. (2006). "Predicting falls in individuals with Parkinson disease: a reconsideration of clinical balance measures." J Neurol Phys Ther 30(2): 60-67.

Duncan, P. W., Weiner, D. K., et al. (1990). "Functional reach: a new clinical measure of balance." J Gerontol 45(6): M192-197.

Kage, H., Okuda, M., et al. (2009). "Measuring methods for functional reach test: comparison of 1-arm reach and 2-arm reach." Archives of Physical Medicine and Rehabilitation 90(12): 2103-2107.

Katz-Leurer, M., Fisher, I., et al. (2009). "Reliability and validity of the modified functional reach test at the sub-acute stage post-stroke." Disabil Rehabil 31(3): 243-248.

Kerr, G.K., Worringham, C.J., et al. (2010). “Predictors of future falls in Parkinson Disease.” Neurology (75): 116-124.

Lim, L. I., van Wegen, E. E., et al. (2005). "Measuring gait and gait-related activities in Parkinson's patients own home environment: a reliability, responsiveness and feasibility study." Parkinsonism Relat Disord 11(1): 19-24.

Lynch, S. M., Leahy, P., et al. (1998). "Reliability of measurements obtained with a modified functional reach test in subjects with spinal cord injury." Phys Ther 78(2): 128-133.

Nocera, J. R., Buckley, T., et al. (2010). "Knee extensor strength, dynamic stability, and functional ambulation: are they related in Parkinson's disease?" Archives of Physical Medicine and Rehabilitation 91(4): 589-595.

Shenkman, M., Ellis, T., et al. (2011). “Profile of functional limitations and task performance among people with early and middle stage Parkinson Disease”, Phys Ther 91; (9), 1339-1354.

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): 733-746.

Tanji, H., Gruber-Baldini, A.L. et al(2008). “A comparative study of physical Performance measures in Parkinson’s Disease”. Mov’t Disorders, 23(13); 1897-1905.

Thomas, J. I. and Lane, J. V. (2005). "A pilot study to explore the predictive validity of 4 measures of falls risk in frail elderly patients." Archives of Physical Medicine and Rehabilitation 86(8): 1636-1640.

Weiner, D. K., Duncan, P. W., et al. (1992). "Functional reach: a marker of physical frailty." J Am Geriatr Soc 40(3): 203-207.

Parkinson Edge Outcome Measures Taskforce

Instrument name: History of Falls Questionnaire	
Reviewer: Suzanne O'Neal, PT, DPT, NCS and Rosemary Gallagher	**Date of review:** May 2013

ICF domain (check all that apply):

_____ Body structure _____ Body function _____ Activity __**X**___ Participation ____ Environment

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:	_**X**_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:

Recommendation Categories

Hoehn and Yahr stage	**4**	**3**	**2**	**1**	**Comments**
I				**X**	
II				**X**	
III				**X**	
IV				**X**	
V				**X**	
Overall Comments:	Unable to recommended due to lack of psychometric data for the Parkinson's 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**	
		X		**X**	
Research Use	**YES**		**NO**		**Comments**
Is this tool appropriate for use in intervention research studies?			**X**		

REFERENCES

Talbot L, Musiol R, et al. (2005). " Falls in young, middle-aged and older community dwelling adults: perceived cause, environmental factors and injury." BMC Public Health 5(86).

Parkinson Edge Outcome Measures Taskforce

Instrument name: Mini-BESTest	
Reviewer: Cathy Harro AND Erin Hussey	**Date of review:** May, 2013

ICF domain (check all that apply):

____ Body structure _X_ Body function _X _ Activity ___ Participation ___ Environment

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 _X_Dual Tasks ___Fatigue ___Flexibility ___Muscle performance ___Muscle tone / spasticity ___Pain _X_Sensory integration ___Somatosensation _X_ Other: balance motor strategies	_X_Balance/falls ___Bed mobility _X_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:

Recommendation Categories

Hoehn and Yahr stage	**4**	**3**	**2**	**1**	**Comments**
I	**X**				Excellent psychometrics AND excellent clinical utility.
II	**X**				Excellent psychometrics AND excellent clinical utility.
III	**X**				Excellent psychometrics AND excellent clinical utility.
IV	**X**				Excellent psychometrics AND excellent

					clinical utility.
V				**NA**	This H Y stage was not assessed in research; functional level too low for the designed balance test.
Overall Comments:	Test Psychometrics: Excellent test-retest and inter-rater reliability. Excellent concurrent validity with multiple standardized balance and mobility measures and excellent discriminative validity. Adequate ability to predict fall risk (retrospective fallers and prospective-6 & 12 month). Some discrepancy is total score used across studies. Measure is responsive to change during rehabilitation with established MDC and SEM.				
Overall Comments:	Excellent Clinical Utility: Requires 10-15 minutes to administer test for trained raters. Training DVD available for BESTest items, however Mini-BEST revised scoring from 4 level to 3 level with revised scoring definitions.				

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**	Clinical utility 10-15 minutes to administer. Shortened version of test (BESTest); strong psychometric characteristics across multiple studies in PD.
	X				
Research Use	**YES**		**NO**		**Comments**
Is this tool appropriate for use in intervention research studies?	X				Excellent psychometrics: reliability, validity, predictive validity without floor or ceiling effects in PD population. Future research should remain consistent with standardization of scoring (28 total points) outlined by primary authors.

REFERENCES

Duncan RP, Leddy AL et al. (2013). Comparative utility of the BESTest, Mini-BESTest, and Brief BESTest for predicting falls in individuals with Parkinson's disease: A Cohort Study. Phys Ther

Duncan RP, Earhart GM (2013). Four square step test performance in people with Parkinson disease. JNPT 00: 1-7

Duncan RP, Leddy AL, Cavanaugh JT et al (2012). Accuracy of fall prediction in Parkinson Disease: 6-month and 12-month prospective analyses. Parkinsons Dis 2012: 237673. Epub 2011 Nov 30

Duncan RP, Earhart GM (2012). Should one measure balance or gait to best predict falls among peoples with Parkinson disease? Parkinsons Dis 2012: 923493

Duncan RP, Leddy AL, Earhart GM (2011). Five times sit to stand test performance in Parkinson disease. Arch Phys Med Rehabil 92 (9): 1431-1436

Godi M Franchignoni F et al. (2013). Comparison of reliability, validity, and responsiveness of Mini BESTest and Berg Balance Scale in patients with balance disorders. Phys Ther 93: 158-167

Franchignoni, F., Horak, F., et al. (2010). "Using psychometric techniques to improve the Balance Evaluation Systems Test: the mini-BESTest." J Rehabil Med 42(4): 323-331

King LA, Priest KC et al (2012). Comparing the Mini-BESTest with the Berg Balance Scale to evaluate balance disorders in Parkinson's disease. Parkinson's Disorders 2012: 375419 Epub 2011, Oct 24

King LA, Horak F (2013). On the Mini BESTest scoring and the reporting of total scores. Phys Ther 93: 571-575

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(2): 90-97

McNeely M, Hershey T et al (2011). Effects of deep brain stimulation of dorsal versus ventral subthalamic neucleus regions on gait and balance in Parkinson disease. J Neuro Neurosurg Psychiatry 82 (11): 1250-1255

McNeely M, Duncan RP et al (2012). Medication improves balance and complex gait performance in Parkson disease. Gait & Posture 36: 144-148

Parkinson Edge Outcome Measures Taskforce

Instrument name: Mini Mental State Examination	
Primary Reviewer: Rosemary Gallagher, PT, DPT, GCS **Secondary Reviewer:** Suzanne O'Neil, PT, DPT, NCS	**Date of review:** 4/2013

ICF domain (check all that apply):

___X__ Body function/structure _____ Activity _____ Participation

Construct/s measured (check all that apply):

Body structure and Function	Activity	Participation
___Aerobic capacity/endurance ___Ataxia ___Cardiovascular/pulmonary status _X__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:

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I			**X**		Is not sensitive enough to pick up mild cognitive impairment, MoCA is more sensitive and is more highly recommended.
II	**X**				*Strict Licensing ruling: Must purchase but cost is not prohibitive. Still a commonly used test.
III	**X**				

IV	**X**				
V			**X**		Not sensitive to change in people with severe dementia
Overall Comments:	MMSE subject to ceiling effects MMSE not sensitive to mild Cognitive impairment (MoCA is better)				

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				Use in research currently but Montreal Cognitive Assessment (MoCA) is a better tool to pick up mild cognitive impairment (MCD) often found in early stages of PD.

References

Bibliography Agrell, B. and Dehlin, O. (2000). "Mini mental state examination in geriatric stroke patients. Validity, differences between subgroups of patients, and relationships to somatic and mental variables." Aging (Milano) 12(6): 439-444.

Andrew, M. K. and Rockwood, K. (2008). "A five-point change in Modified Mini-Mental State Examination was clinically meaningful in community-dwelling elderly people." Journal of Clinical Epidemiology 61(8): 827-831.

Aarsland D, Andersen K, Larsen JP, et al (2001). Risk of dementia in Parkinson's disease, a community based prospective study. *Neurology*, 56:730-736.

Aarsland D, Andersen K, Larsen JP, et al (2001). The rate of cognitive decline in Parkinson's disease, *Arch Neurol*, 61:1906-1911.

Blake, H., McKinney, M., et al. (2002). "An evaluation of screening measures for cognitive impairment after stroke." Age Ageing 31: 451-456.

Bravo, G. and Hebert, R. (1997). "Age- and education-specific reference values for the Mini-Mental and modified Mini-Mental State Examinations derived from a non-demented elderly population." International Journal of Geriatric Psychiatry 12(10): 1008-1018.

de Guise, E., Gosselin, N., et al. (2011). "Clock drawing and mini-mental state examination in patients with traumatic brain injury." Appl Neuropsychol 18(3): 179-190.

Dick, J. P., Guiloff, R. J., et al. (1984). "Mini-mental state examination in neurological patients." Journal of Neurology, Neurosurgery and Psychiatry 47(5): 496-499.

Dujardin K, Bubois B, Tison F, et al (20100 Parkinson's disease dementia can be easily detected in routine clinical practice. *Mov't Disorders*, 25(16):2769-2776.

Folstein, M. F., Folstein, S. E., et al. (1975). ""Mini-mental state". A practical method for grading the cognitive state of patients for the clinician." J Psychiatr Res 12: 189-198.

Harvey, P. D., Ferris, S. H., et al. (2010). "Evaluation of dementia rating scales in Parkinson's disease dementia." Am J Alzheimers Dis Other Demen 25(2): 142-148.

Hoops, S., Nazem, S., et al. (2009). "Validity of the MoCA and MMSE in the detection of MCI and dementia in Parkinson disease." Neurology 73(21): 1738-1745.

Jacqmin-Gadda, H., Fabrigoule, C., et al. (1997). "A 5-year longitudinal study of the Mini-Mental State Examination in normal aging." American Journal of Epidemiology 145(6): 498-506.

Lancu, I. and Olmer, A. (2006). "[The minimental state examination--an up-to-date review]." Harefuah 145(9): 687-690, 701.

Molloy, D. W. and Standish, T. I. (1997). "A guide to the standardized Mini-Mental State Examination." International Psychogeriatrics 9 Suppl 1: 87-94; discussion 143-150.

Mungas, D., Marshall, S. C., et al. (1996). "Age and education correction of Mini-Mental State Examination for English and Spanish-speaking elderly." Neurology

46(3): 700-706.

Nazem S, Siderowf AD, Duda JE, et al (2009). Montreal Cognitive Assessment performance in patients with Parkinsons' Disease with "normal" global cognition according to Mini Mental State Examination Score. *JAGS*, 57:304-308.

Nys, G. M. S., van Zandvoort, M. J. E., et al. (2005). "Restrictions of the Mini-Mental State Examination in acute stroke." Arch Clin Neuropsychol 20: 623-629.

Ozdemir, F., Birtane, M., et al. (2001). "Cognitive evaluation and functional outcome after stroke." Am J Phys Med Rehabil 80: 410-415.

Pagonabarraga, J., Kulisevsky, J., et al. (2010). "PDD-Short Screen: a brief cognitive test for screening dementia in Parkinson's disease." Movement Disorders 25(4): 440-446.

Pedraza, O., Clark, J. H., et al. (2012). "Diagnostic validity of age and education corrections for the Mini-Mental State Examination in older African Americans." J Am Geriatr Soc 60(2): 328-331.

Salter, K., Jutai, J., et al. (2005). "Issues for selection of outcome measures in stroke rehabilitation: ICF body functions." Disability & Rehabilitation 27(4): 191-207.

Srivastava, A., Rapoport, M. J., et al. (2006). "The utility of the mini-mental status exam in older adults with traumatic brain injury." Brain Inj 20(13-14): 1377-1382.

Tombaugh, T. N. and McIntyre, N. J. (1992). "The mini-mental state examination: a comprehensive review." J Am Geriatr Soc 40: 922-935.

Zadikoff C, Fox SH, Tang-Wai DF, et al (2008) A comparison of the Mini Mental State Exam to the Montreal Cognitive Assessment in identifying cognitive deficits in Parkinson's disease. *Mov't Disorders*, 23(2): 297-299.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Montreal Cognitive Assessement (MoCA)	
Reviewer: Erin Hussey and Cathy Harro	**Date of review:** May, 2013

ICF domain (check all that apply):

____ Body structure __X_ Body function __ _ Activity ___ Participation ___ Environment

Construct/s measured (check all that apply):

Body structure and Function	Activity	Participation
___Aerobic capacity/endurance ___Ataxia ___Cardiovascular/pulmonary status _X__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:

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I	**X**				Strong psychometrics and good clinical utility for use in screening for cognitive decline
II	**X**				Strong psychometrics and good clinical utility for use in screening for cognitive decline
III	**X**				Strong psychometrics and good clinical utility for use in screening for cognitive

					decline
IV	**X**				Strong psychometrics and good clinical utility for use in screening for cognitive decline
V		**X**			Limited number of subjects have been included at Stage V. Those reported support use of tool in screening for cognitive decline.
Overall Comments:	Psychometrics: Excellent reliability, excellent correlation with MMSE and neuropsychology test batteries at screening level, excellent sensitivity for detection of mild cognitive impairment in earlier stages. Good sensitivity and adequate specificity for the screening of dementia across all stages of disease progression. Cutoff scores reported for mild cognitive impairment and for dementia.				
Overall Comments:	Clinical Utility: Efficient – requires about 10 minutes to administer.				

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				
Research Use	**YES**		**NO**		**Comments**
Is this tool appropriate for use in intervention research studies?	X				Recommended for use in research particularly when cognition is being screened (ie, cognition is not a primary outcome).

REFERENCES

Chou KL, Amick MM, Brandt J, et al. (2010). A recommended scale for cognitive screening in clinical trials of Parkinson's disease. *Movement Disorders*. 25(15):2501–2507. doi:10.1002/mds.23362

Dalrymple-Alford JC, MacAskill MR, Nakas CT, et al. (2010). The MoCA well-suited screen for cognitive impairment in Parkinson disease. *Neurology*. 75(19):1717–1725. doi:10.1212/WNL.0b013e3181fc29c9

Gill DJ, Freshman A, Blender JA, Ravina B. (2008). The Montreal Cognitive Assessment as a screening tool for cognitive impairment in Parkinson's disease. *Movement Disorders*. 23(7):1043–1046.

Hoops S, Nazem S, Siderowf AD, et al. (2009). Validity of the MoCA and MMSE in the detection of MCI and dementia in Parkinson disease. *Neurology*. 73(21):1738–1745.

Nazem S, Siderowf AD, Duda JE, et al. (2009). Montreal Cognitive Assessment Performance in Patients with Parkinson's Disease with "Normal" Global Cognition According to Mini-Mental State Examination Score. *Journal of the American Geriatrics Society*. 57(2):304–308.

Nasreddine, Z. S., Phillips, N. A., et al. (2005). "The Montreal Cognitive Assessment, MoCA: a brief screening tool for mild cognitive impairment." Journal of the American Geriatrics Society 53(4): 695-699.

Robben, S. M., Sleegers, M. M., Dautzenberg, P. J., van Bergen, F. S., ter Bruggen, J., & Rikkert, M. (2010). Pilot study of a three-step diagnostic pathway for young and old patients with Parkinson's disease dementia: screen, test and then diagnose. *International Journal Of Geriatric Psychiatry*, *25*(3), 258-265.

Rossetti, H. C., Lacritz, L. H., et al. (2011). "Normative data for the Montreal Cognitive Assessment (MoCA) in a population-based sample." Neurology 77(13): 1272-1275.

Smith, T., Gildeh, N., et al. (2007). "The Montreal Cognitive Assessment: validity and utility in a memory clinic setting." Canadian Journal of Psychiatry. Revue Canadienne de Psychiatrie 52(5): 329-332.

Toglia, J., Fitzgerald, K. A., et al. (2011). "The Mini-Mental State Examination and Montreal Cognitive Assessment in persons with mild subacute stroke: relationship to functional outcome." Archives of Physical Medicine and Rehabilitation 92(5): 792-798.

Zadikoff C, Fox SH, Tang-Wai DF, et al (2008). A comparison of the Mini Mental State Exam to the Montreal Cognitive Assessment in identifying cognitive deficits in Parkinson's disease. *Movement Disorders*. 23(2):297–299.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Modified Gait Efficacy Scale	
Reviewer: Alicia Esposito, PT, DPT, NCS and Deb Kegelmeyer DPT, MS, GCS	**Date of review:** May 2013

ICF domain (check all that apply):4/27/13

_____ Body structure _____ Body function __ _X__ Activity ___X__ Participation ____ environment

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:	__X_Balance/falls ___Bed mobility ___Gait (include stairs) ___High Level mobility ___Transfers ___Wheelchair skills ___Other:	_X__Community function ___Driving ___Health and wellness ___Home management ___Leisure/Recreational activities ___Life satisfaction __X_Quality of life ___Reintegration to community ___Role function ___Shopping ___Social function ___Work ___Other:

Link to rehabmeasures.org summary:

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I			**X**		
II			**X**		
III			**X**		
IV			**X**		
V			**N/A**		
Overall Comments:	PD EDGE grading: 2 due to lack of establishment of psychometric				

	properties and normative data in the PD 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**	Similar self efficacy objective measures like the ABC and the FES have been more thoroughly researched and thus should be the focus of entry level education
		X		X	
Research Use	**YES**		**NO**		**Comments**
Is this tool appropriate for use in intervention research studies?			X		Can be utilized in researched however, similar self efficacy objective measures like the ABC and the FES have been more thoroughly researched and

REFERENCES

Newell, et al (2011). “The modified gait efficacy scale: establishing the psychometric properties in older adults.” Physical Therapy. 92: p318-328.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Modified Parkinson Activity Scale	
Reviewer: Suzanne O'Neal, PT, DPT, NCS	**Date of review: May 2013**

ICF domain (check all that apply):

_____ Body structure _____ Body function __**X**___ Activity _____ Participation ____ environment

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:	_**X**__Balance/falls _**X**__Bed mobility _**X**__Gait (include stairs) _**X**__High Level mobility _**X**__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:

Recommendation Categories

Hoehn and Yahr stage	**4**	**3**	**2**	**1**	**Comments**
I			**X**		
II			**X**		
III			**X**		
IV			**X**		
V				**X**	
Overall Comments:	Good correlation with UPDRS (motor) and VAS. No ceiling effect found. Established MDC. Only one study found.				

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**	Good psychometrics however only one study found.
		X		**X**	
Research Use	**YES**		**NO**		**Comments**
Is this tool appropriate for use in intervention research studies?			**X**		

REFERENCES

Keus S.J.H., Nieuwboer, A., et al. (2009). "Clinimetric analyses of the Modified Parkinson Activity Scale." Parkinsonism and Related Disorders 15(4)263-9.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Physical Performance Test- Modified	
Reviewer: Jeffrey Hoder and Terry Ellis	**Date of review:** 2/20/2012

ICF domain (check all that apply):

_____ Body structure _____ Body function __X_ Activity _____ Participation ____ environment

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 _X_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: http://www.rehabmeasures.org/Lists/RehabMeasures/PrintView.aspx?ID=1104

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I			**X**		Small n in studies.
II		**X**			
III		**X**			
IV		**X**			
V			**X**		Small n in studies.

Overall Comments:

- Three Versions: 9-item scale and 7-item scale of PPT and a modified PPT looking at gait and balance.
- A 5-point scale of (0-4) on each item
- Timed ADL tasks:
  - PPT (9 items): write a sentence, place beans in a coffee can, lift

	heavy book (PDR), don a lab coat, pick up a penny from the floor, turn 360 degrees, walk 50 ft, negotiate 9-12 steps (time and # flights). • PPT (7 items): excludes stairclimbing • **Modified PPT (9 items): progressive standing static balance (Romberg, ½ tandem, tandem), chair rise, book lift, don/doff jacket, pick up penny from floor, 360 degree turn, 50 ft walk, stair climb (time and # flights). (excludes writing and simulated eating)** • Classification: Modified PPT: Not frail (32–36 points), mildly frail (25–31 points), or moderately frail (17–24 points). (Brown et al, 2000; 107 elderly subjects, >77 y.o.) • 10-15 minutes to administer • Equipment needed
Overall Comments:	Parkinson's disease: MDC = 2.5 (Paschal, 2006) looked at PPT (9 and 7 item) (Paschal, 2006; *n* =14; mean age = 62.4(6.3); mean time of diagnosis 6.4(6.3) years; modified Hoehn and Yahr Stages 2 and 2.5) • Excellent psychometrics (test/retest ICC=0.818 for modified version, 0.895 for full version; interrater reliability 0.93-0.99) • Correlates with Katz Activities of daily living and Tinetti gait. • Insensitive to short term fluctuations (Paschal, 2006) Modified PPT: (Tanji, 2008; n=79 total; mean age=65.5; HY stage I n=5, II=47, III=13, IV=9, V=5) • High Interrater reliability (0.94-0.99) • Modified PPT discriminated levels of disability (total UPDRS) better than motor impairment (motor UPDRS). Good with early stages of PD, unsatisfactory with advanced disease. Correlated well with UPDRS. No normative data established. *There are different versions of this test and their names seemed to be used interchangeably in the literature. **Conclusion: In its various forms, the Physical Performance Test has a nice sampling of ADLs. The modified PPT needs to be further researched for individuals with PD to determine MDC, MIDC, and**

	any predictive value. I would not include this in our core group.				
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				PPT for studies looking at dexterity. Mod PPT for studies more focused on gait and balance.

Binder EF, Storandt M, Birge SJ. (1999). "The Relationship Between Psychometric Test Performance and Physical Performance in Older Adults." Jour Gerontology Med Sci; 54A(8):M428-M432.

Brown M, Sinacore DR, Binder EF, Kohrt WM. (2000). "Physical and Performance Measures for the identification of mild to moderate frailty."J Gerontol A Biol Sci Med Sci; 55(6):M350-5.

Lusardi, M. M., Pellecchia, G. L., et al. (2003). "Functional performance in community living older adults." Journal of Geriatric Physical Therapy 26: 14-22.

Paschal, K., Oswald, A., et al. (2006). "Test-retest reliability of the physical performance test for persons with Parkinson disease." J Geriatr Phys Ther 29(3): 82-86.

Reuben, D. B. and Siu, A. L. (1990). "An objective measure of physical function of elderly outpatients. The Physical Performance Test." J Am Geriatr Soc 38(10): 1105-1112.

ROZZINI, R., FRISONI, G. B., et al. (1997). "The effect of chronic diseases on physical function. Comparison between activities of daily living scales and the Physical Performance Test." Age and Ageing 26(4): 281-287.

Tanji H, Gruber-Baldini AL, Anderson KE, Pretzer-Aboff I, Reich SG, Fishman PS, Weiner WJ, Shulman LM. (2008). "A comparative study of physical Performance measures in Parkinson's disease." Mov Disord; 23(13): 1897-905.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Multidirecitonal Functional Reach	
Reviewer: Alicia Esposito, and Deb Kegelmeyer	**Date of review:** 4/30/13

ICF domain (check all that apply):

_____ Body structure __X___ Body function __ X___ Activity _____ Participation
____ environment

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:	_x__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:

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I			**X**		
II			**X**		
III			**X**		
IV			**X**		
V			**N/A**		
Overall Comments:	No literature regarding its use in the PD population. The multidirectional functional reach provides a unique opportunity to measure reach in alternate directions as forward reach does not predict				

	ability to perform backward or lateral reach and therefore fall risk may not be accurately captured with a reaching test in only one direction. Decreased strength of psychometric properties for backward and lateral reach may indicate that forward reach (as per the functional reach) may be a more effective use of time				
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		Not to be used in PD related research secondary to a lack of literature supporting its use in the PD population

REFERENCES

Holbein-Jenny, MA et al (2005). "Balance in personal care home residents: a comparison of the berg balance scale, the multi-directional reach test, and the activities-specific balance confidence scale." Journal of Geriatric Physical Therapy. 28(2): pp. 48-53.

Newton, RA (1997). "Balance screening of an inner city older adult population." Arch Phys med Rehabil. 78: pp. 587-591.

Newton, RA (2001). "Validity of the multi directional reach test: A practical measure for limits of stability in older adults." Journal of Gerontology: Medical Sciences. 56A(4): p: M248-M252.

Steffen, TM, Mollinger, LA (2005). "Age and gender related test performance In community dwelling adults." Journal of neurological physical therapy. 29(4)p:181-188.

Parkinson Edge Outcome Measures Taskforce

Instrument name: OPTIMAL	
Reviewer: Deb Kegelmeyer and Alicia Esposito	**Date of review:** May 2013

ICF domain (check all that apply):

_____ Body structure _____ Body function __x ___ Activity _____ Participation ____ environment

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 __x_Pain ___Sensory integration ___Somatosensation ___Other:	_x__Balance/falls _x__Bed mobility _x__Gait (include stairs) _x__High Level mobility _x__Transfers ___Wheelchair skills ___Other:	___Community function ___Driving ___Health and wellness _x__Home management _x__Leisure/Recreational activities ___Life satisfaction ___Quality of life ___Reintegration to community ___Role function ___Shopping ___Social function ___Work ___Other:

Link to rehabmeasures.org summary:

Recommendation Categories

Hoehn and Yahr stage	**4**	**3**	**2**	**1**	**Comments**
I			**x**		
II			**x**		
III			**x**		
IV				**x**	Maybe a 2 there may be some ceiling effects here though it hasn't been studied
V					Not able to do test items
Overall Comments:	Some ceiling effects were noted in other populations. No studies in PD specifically though the study may have included some individuals with				

	PD but weren't separated out for analysis				
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 studies in PD but good in those studied.

REFERENCES

Guccione, AA., et al. "Development and testing of a self-report instrument to measure actions: outpatient physical therapy improvement in movement assessment log (OPTIMAL)." Physical Therapy, v. 85 issue 6, 2005, p. 515-30.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Parkinson's Disease Activities of Daily Living Scale	
Reviewer: Alicia Esposito and Deb Kegelmeyer	**Date of review:** 4/30/13

ICF domain (check all that apply):

_____ Body structure _____ Body function __ X___ Activity ___X__ Participation ____ environment

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 __X_Quality of life ___Reintegration to community ___Role function ___Shopping ___Social function ___Work ___Other:

Link to rehabmeasures.org summary:

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I			**X**		Literature does not provide information as per H and Y scale and instead uses disease duration
II			**X**		
III			**X**		
IV			**X**		
V			**X**		
Overall Comments:	Further assessment of psychometric properties is necessary to determine how effective the PADLS is as a measure of self rated ADL ability. Since the PADLS does not allow individuals to rate the severity of the problem and the authors report that it should not be utilized in isolation, the question				

	remains whether the information provided by the PADLS is more effective then other already established self assessments of ADL ability. The author states that the PADLS provides health professionals a reliable index of self rated DL which takes little time to complete. The PADLS provides a single global rating and does not allow the individual to rate severity of specific problems. The PADLS is not suitable in isolation and must complement existing measures in order to provide the health professional with more comprehensive information on how patient's perceive their illness.				
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		Not to be used in PD related research secondary to a lack of literature supporting its use

REFERENCES

Hobson, JP, Edwards, NI, Meara, RJ (2001). "The parkinson's disease activities of daily living scale: a new simple and brief subjective measure of disability in parkinson's disease." Clin Rehabil 15: 241-246.

Martinez-Martin, P et al (2008). "Specific patient-reported outcome measures for parkinson's disease: analysis and applications." Expert Rev. Pharmacoeconomics Outcome Res 8(4) 401-418

Parkinson Edge Outcome Measures Taskforce

Instrument name: Parkinson's Fatigue Scale	
Reviewer: Alicia Esposito, and Deb Kegelmeyer	**Date of review:** 4/27/13

ICF domain (check all that apply):

_____ Body structure ___X__ Body function __ _X__ Activity ___X__ Participation
____ environment

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 _X__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 __X_Quality of life ___Reintegration to community ___Role function ___Shopping __X_Social function ___Work ___Other:

Link to rehabmeasures.org summary:

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I		**X**			
II		**X**			
III		**X**			
IV		**X**			
V		**X**			
Overall Comments:	Recommended scale as per the Movement Disorders Society Recommendations for patients with Parkinson's Disease across all				

	stages of H and Y or the UPDRS motor scale Good psychometric properties and clinical utility. Variability regarding scoring method is necessary in order to ensure consistency of its use. Whether the PFS provides an advantage over generic fatigue scales is unclear. Because fatigue is multidimensional with physical emotional, cognitive and social features, the PFS may not adequately reflect clinically significant non-physical aspects of fatigue.				
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**	Highly specific tool measuring fatigue only in individuals with Parkinson's Disease.
		X	X		
Research Use	**YES**		**NO**		**Comments**
Is this tool appropriate for use in intervention research studies?	X				Should be utilized only if measuring the PHYSICAL aspects of fatigue. The PFS may not provide an advantage over generic fatigue scales.

REFERENCES

Brown, et al (2005). "The parkinson fatigue scale." Parkinsonism and related disorders. 11:49.55.

Friedman, J et al (2010). "Fatigue rating scales critique and recommendations by the movement disorders society task force on rating scales for parkinson's disease." Movement Disorders 25(7): 805-822.

Grace, J et al (2007). "A comparison of fatigue measures in parkinson's disease." Parkinsonism and Related Disorders. 13:443-445.

Martinez-Martin, P et al (2008). "Specific patient-reported outcome measures for parkinson's disease: analysis and applications." Expert Rev. Pharmacoeconomics outcomes Res. 8(4): 401-418.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Parkinson's Disease Questionaire-8	
Reviewer: Terry Ellis PT, PhD, NCS; Laura Savella, sPT	**Date of review:** 4/30/13

ICF domain (check all that apply):

_____ Body structure _____ Body function ___ Activity __X__ Participation _____ environment

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 _X_Quality of life ___Reintegration to community ___Role function ___Shopping __Social function ___Work ___Other:

Link to rehabmeasures.org summary:

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I	**X**				At least 2 studies report excellent psychometric properties in Stage 1
II	**X**				Numerous studies report excellent psychometric properties in Stage 2
III	**X**				Numerous studies report excellent psychometric properties in Stage 3
IV	**X**				At least 2 studies report excellent psychometric properties in Stage 4

V		**X**			One study reports on adequate to excellent convergent validity and adequate internal consistency in a sample including persons in H&Y Stage 5.
Overall Comments:	Many studies do not specify number of participants in each H&Y stage but report the mean H&Y stage. The majority of evidence supporting the use of this measure is for persons in H&Y Stages 2-3. The use of the PDQ-8 is highly recommended for persons in H&Y Stages 1-4 and recommended for use in persons in H&Y Stage 5. This is a quick, valid, and reliable tool with adequate to excellent psychometric data supporting its use in persons with PD. It is moderately to highly responsive to changes in HRQoL with natural disease progression and with pharmacological interventions, particularly in the later H&Y stages. However, responsiveness to rehab interventions has not been adequately assessed. The PDQ-8 has no ceiling/floor effects and is adequately correlated with H&Y Stages, UPDRS scores, and disease duration.				

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 is a quick, valid, and reliable tool with adequate to excellent psychometric data supporting its use in persons with Parkinson's disease. It is a useful tool for identifying changes in quality of life over time as the disease progresses. Responsiveness to rehabilitation interventions is unknown.
	X				

Research Use	**YES**	**NO**	**Comments**
Is this tool appropriate for use in intervention research studies?	X		This is a quick, valid, and reliable tool with adequate to excellent psychometric data supporting its use in persons

			with PD. It is moderately to highly responsive to changes in HRQoL with disease progression and with pharmacological interventions, however responsiveness to rehab interventions has not been adequately assessed. The PDQ-8 has no ceiling/floor effects and is adequately correlated with H&Y Stages, UPDRS scores, and disease duration.

REFERENCES

Caap-Ahlgren M, Dehlin O. Sense of coherence is a sensitive measure for changes in subjects with Parkinson' s disease during 1 year. *Scand J Caring Sci*. 2004;18:154–159.

Franchignoni F, Giordano A, Ferriero G. Rasch analysis of the short form 8-item Parkinson's Disease Questionnaire (PDQ-8). *Qual Life Res.* 2008;17(4):541–8.

Fung VSC, Herawati L, Wan Y. Quality of life in early Parkinson's disease treated with levodopa/carbidopa/entacapone. *Mov Disord.* 2009;24(1):25–31.

Honig H, Antonini A, Martinez-Martin P, et al. Intrajejunal levodopa infusion in Parkinson's disease: a pilot multicenter study of effects on nonmotor symptoms and quality of life. *Mov Disord.* 2009;24(10):1468–74.

Huang T-T, Hsu H-Y, Wang B-H, Chen K-H. Quality of life in Parkinson's disease patients: validation of the Short-Form Eight-item Parkinson's Disease Questionnaire (PDQ-8) in Taiwan. *Qual Life Res.* 2011;*20*(4), 499–505.

Jenkinson C, Fitzpatrick R, Peto V, Greenhall R, Hyman N. The PDQ-8: Development and validation of a short-form Parkinson's disease questionnaire. *Psychology & Health.* 1997;12(6):805-814.

Jenkinson C, Fitzpatrick R. Cross-cultural evaluation of the short form 8-item Parkinson's Disease Questionnaire (PDQ-8): results from America, Canada, Japan, Italy and Spain. *Parkinsonism & related disorders*. 2007;13(1):22–8.

Katsarou Z, Bostanjopoulou S, Peto V, Kafantari A, Apostolidou E, Peitsidou E. Assessing quality of life in Parkinson's Disease: Can a short form questionnaire be useful? *Mov Disord*. 2004;19(3):308-312.

Laupheimer M, Härtel S, Schmidt S, Bös K. Forced Exercise - effects of MOTOmed ® therapy on typical motor dysfunction in Parkinson's disease. *Neurol Rehabil.* 2011;17(5/6):239–244.

Luo N, Tan LCS, Zhao Y, Lau P-N, Au W-L, Li SC. Determination of the longitudinal validity and minimally important difference of the 8-item Parkinson's Disease Questionnaire (PDQ-8). *Mov. Disord.* 2009;24(2):183–7.

Luo N, Ng W-Y, Lau P-N, Au W-L, Tan LC. Responsiveness of the EQ-5D and 8-item Parkinson's Disease Questionnaire (PDQ-8) in a 4-year follow-up study. *Qual Life Res*. 2010;19(4):565–9.

Martínez-Martín P, Benito-Leon J, Alonso F, et al. Quality of life of caregivers in Parkinson' s disease. *Qual Life Res*. 2005;14:463–472.

Onofrj M., Thomas A, Vingerhoets F, et al. Combining entacapone with levodopa/DDCI improves clinical status and quality of life in Parkinson's Disease (PD) patients experiencing wearing-off, regardless of the dosing frequency: results of a large multicentre open-label study. *J Neural Transm*. 2004;111(8):1053–63.

Tan LCS, Luo N, Nazri M, Li SC, Thumboo J. Validity and reliability of the PDQ-39 and the PDQ-8 in English-speaking Parkinson's disease patients in Singapore. *Parkinsonism & related disorders*. 2004;10(8):493–9.

Tan LCS, Lau P-N, Au W-L, Luo N. Validation of PDQ-8 as an independent instrument in English and Chinese. *Journal of the Neurological Sciences*. 2007;255(1-2):77–80.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Parkinson's Disease Questionaire-39	
Reviewer: Terry Ellis, PT PhD, NCS; Laura Savella, sPT and Jeffrey Hoder	**Date of review:** 4/30/13

ICF domain (check all that apply):

_____ Body structure ___ Body function ___ Activity __X__ Participation ____ Environment

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 _X_Quality of life ___Reintegration to community ___Role function ___Shopping ___Social function ___Work ___Other:

Link to rehabmeasures.org summary:
http://www.rehabmeasures.org/Lists/RehabMeasures/PrintView.aspx?ID=1017

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I	**X**				Numerous studies report good to excellent psychometric properties
II	**X**				Numerous studies report good to excellent psychometric properties
III	**X**				Numerous studies report good to excellent psychometric properties

IV	**X**				Numerous studies report good to excellent psychometric properties
V	**X**				Numerous studies report good to excellent psychometric properties
Overall Comments:	Many studies do not specify number of participants in each H&Y stage but report the mean H&Y stage. The use of the PDQ-39 is highly recommended for persons in H&Y Stages 1-5. The psychometric properties of the PDQ-39 have been extensively studied. There is extensive psychometric data available for this measure, the majority of which reveals adequate to excellent validity and reliability for both the PDQ-39 Summary Index score and most of the 8 domain scores (with the notable exception of the Social Support domain). Caution should be taken when interpreting information from the various domains of the PDQ-39, as the psychometric data suggests the domain scores are often less valid and reliable and have larger floor and ceiling effects compared with the PDQ-39 Summary Index score.				

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 PDQ-39 is a valid and reliable tool with adequate to excellent psychometric data supporting its use in persons with Parkinson's disease. It is a useful tool for identifying changes in quality of life over time with disease progression, and has shown to be responsive to both pharmacological and rehabilitation interventions
	X				
Research Use	**YES**		**NO**		**Comments**
Is this tool appropriate	X				The PDQ-39 is a valid and

for use in intervention research studies?			reliable tool with adequate to excellent psychometric data supporting its use in persons with PD. It is moderately to highly responsive to changes in HRQoL with disease progression, pharmacological and rehabilitation interventions. The PDQ-39 Summary Index has neither ceiling nor floor effects, but some domain scores (Stigma, Social Support, and Communication) display floor effects, while others (Mobility, Social Support) have displayed ceiling effects.

REFERENCES

Brown CA, Cheng EM, Hays RD, Vassar SD, Vickrey BG. SF-36 includes less Parkinson Disease (PD)-targeted content but is more responsive to change than two PD-targeted health-related quality of life measures. *Qual Life Res.* 2009;18(9):1219–37.

Bushnell DM, Martim ML. Quality of life and parkinson's disease: translation and validation of the US Parkinson's disease questionnaire (PDQ-39).*Qual Life Res.* 1999;8:345-350

Carod-Artal FJ, Martinez-Martin P, Vargas AP. Independent validation of SCOPA-Psychosocial and metric properties of the PDQ-39 Brazilian Version. 2007; 22(1):91-98.

Damiano AM, Snyder C, Strausser B, Willian MK. A review of health-related quality-of-life concepts and measures for Parkinson's disease. Qual Life Res 1999;8:235–43.

Damiano AM, McGrath MM, Willian MK, et al. Evaluation of a measurement strategy for Parkinson's disease: assessing patient health-related quality of life. *Qual Life Res.* 2000; 9:87-100.

Duncan RP, Earhart GM. Measuring participation in individuals with Parkinson disease: relationships with disease severity, quality of life, and mobility. *Disabilty and Rehabilitation.* 2011;33(15-16):1440-1446.

Fitzpatrick R, Peto V, Jenkinson C, Greenhall R, Hyman N. Health- related quality of life in Parkinson's disease: A study of outpatient clinic attenders. *Mov Disord* 1997;12:916–22.

Fitzpatrick R, Norquist JM, Jenkinson C. Distribution-based criteria for change in health-related quality of life in Parkinson's disease. J Clin Epidemiol 2004;57:40–4.

Flemming A, Cook KF, Nelson ND, Lai EC. Proxy reports in Parkinson's disease: caregiver and patient self-reports of quality of life and physical activity. *Mov Disord.* 2005; 20(11):1462-1468.

Hagell P, Nygren C. The 39 item Parkinson's disease questionairre (PDQ-39) revisited: implications for evidence based medicine. *J Neurol Neurosurg Psychiatry.* 2007;78;1191-1198.

Harrison JE, Preston S, Blunt SB. Measuring symptom chane in patients with Parkinson's disease. *Age and Ageing.* 2000;29:41-5.

Jenkinson C, Peto V, Fitzpatrick R, Greenhall R, Hyman N. Self- reported functioning and well-being in patients with Parkinson's disease: Comparison of the Short-form Health Survey (SF-36) and the Parkinson's Disease Questionnaire (PDQ-39). Age Ageing 1995;24: 505-509

Jenkinson C, Fitzpatrick R, Peto V, Greenhall R, Hyman N. The Parkinson's Disease Questionnaire (PDQ-39): development and validation of a Parkinson's disease summary index score. Age Ageing
1997;26:353–7.

King LA, Salarian A, Mancini et al. Exploring outcome measures for exercise intervention in people with Parkinson's disease. Hindawi Publishing Company. 2013: 1-9.

Luo N, Ng WY, Lau PN, Au WL, Tan LC. Responsiveness of the EQ-5D and 8-item Parkinson's Disease Questionnaire (PDQ-8) in a 4-year follow-up study. Qual Life Res. 2010 May;19(4):565-9.

Marinus J, Ramaker C, van Hilten JJ, Stigglebout AM. Health related quality of life in Parkinson's disease a systematic review of disease specific instruments. *J Neurol Neurosurg Psychiatry.* 2002;72:241-248.

Marinus J., Visser M., Martinez-Martin P., van Hilten J.J., Stiggelbout A.M. (2003) A short psychosocial questionnaire for patients with Parkinson's disease: the SCOPA-PS. J Clin Epidemiol 56: 61–67.

Martínez-Martín P, Serrano-Duenas M, Vaca-Baquero V. Psychometric characteristics of the Parkinson's disease questionnaire (PDQ-39)- Ecuadorian version. *Parkinsonism and Related Disorders.* 2005;11:297-304.

Martinez-Martin P, Serrano-Duenas M, Forjaz MJ, Serrano MS. Two questionnaires for Parkinson's disease: are the PDQ-39 and PDQL equivalent? *Qual Life Res.* 2007; 16(7):1221-1230.

Martinez-Martin P., Carod-Artal F.J., da Silveira Ribeiro L., Ziomkowski S., Vargas A.P., Kummer W., et al. (2008) Longitudinal psychometric attributes, responsiveness, and importance of change: An approach using the SCOPA-Psychosocial questionnaire. Mov Disord 23: 1516–1523.

Olanow CW, Kieburtz K, Strent M. Double- blind, placebo-controlled study of Entacapone in Levodopa-treated patients with stable Parkinson disease. *Arch Neurol.* 2004;61:1563-1568.

Peto V, Jenkinson C, Fitzpatrick R, Greenhall R. The development and validation of a short measure of functioning and well being for individuals with Parkinson's disease. *Qual Life Res*. 1995;4: 241–248.

Peto V, Jenkinson C, Fitzpatrick R. PDQ-39: a review of the development, validation, and application of a Parkinson's disease quality of life questionnaire and its associated measures. *J Neurol.* 1998;245[Suppl 1]:S10-S14.

Schenkman M, Hall DA, Baron AE, Schwartz RS, Mettler P, Kohrt WM. Exercise for people in early- or min-stage Parkinson disease: a 16-month randomized controlled trial. *Phys Ther*. 2012; 92(11:1395-1410.

Schrag A, Selai C, Jahanshahi M, et al. The EQ-5D—a generic quality of life measure—is a useful instrument to measure quality of life in patients with Parkinson's disease. 2000;69:67–73.

Schrag A, Jahanshahi M, Quinn N. What contributes to quality of life in patients with Parkinson's disease? 2000;69:308–12. 30 Schrag A, Jahansha

Schrag A, Spottke A, Quinn N, et al. Comparative responsiveness of Parkinson's disese scales to change over time. *Mov Disord*. 2009;24(6):813-818.

Tan LCS, Luo, Nazri M, Li SC, Thumboo J. Validity and reliability of the PDQ-39 and the PDQ-8 in English-speaking Parkinson's disease patients in Singapore. *Parkinsonism & Related Disorders*. 2004;10(8):4930499.

Tickle Degnen L, Ellis T. (2010). Self-management rehabilitation and health-related quality of life in Parkinson's disease: a randomized controlled trial. *Mov Disord*. *25*(2):194–204.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Profile PD	
Reviewer: Cathy Harro and Erin Hussey	**Date of review:** May, 2013

ICF domain (check all that apply):

____ Body structure _X_ Body function _X_ Activity ___ Participation ___ Environment

Construct/s measured (check all that apply):

Body structure and Function	**Activity**	**Participation**
___Aerobic capacity/endurance ___Ataxia ___Cardiovascular/pulmonary status _X_Cognition ___Coordination (non-equilibrium) ___Dizziness ___Dual Tasks ___Fatigue ___Flexibility _X_ Muscle performance _X_ Muscle tone / spasticity ___Pain ___Sensory integration ___Somatosensation _X_ Other: : Postural control strategies; bradykinesia	_X_ Balance/falls _X_ Bed mobility _X_ Gait (include stairs) _ __High Level mobility _X_ 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:

Recommendation Categories

Hoehn and Yahr stage	**4**	**3**	**2**	**1**	**Comments**
I			**X**		Good but limited psychometrics in PD (only 2 published studies) and good clinical utility.
II			**X**		Good but limited psychometrics in PD (only 2 published studies) and good clinical utility.
III			**X**		Good but limited psychometrics in PD

					(only 2 published studies) and good clinical utility.
IV				**X**	Test has not been examined in stage 4 in the original 2 research studies.
V				**X**	Test has not been examined in stage 5 in original 2 research studies.
Overall Comments:	Psychometrics: Profile PD published research limited to original study by Schenkman and one other study. A single study provides evidence for excellent inter-rater reliability and adequate internal consistency in 2/3 subsections and in the total score. Good construct validity for distinguishing between stage of PD and disease severity. Lack of research on measure's responsiveness or sensitivity to change. Further research is needed before strong clinical recommendations can be made for its use in clinical practice across PD stages of disease. Further research is also needed to compare UPDRS-MS with Profile PD to support construct/criterion validity.				
Overall Comments:	Clinical Utility: Good—requires 20-30 minutes to administer, no cost or specialized equipment for 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**	Limited research on this tool but its parallel structure and face validity to UPDRS (gold standard PD measure), with focus on activity and function specific to PD makes it a good learning tool about physical therapy examination in persons with PD.
		X		X	

Research Use	**YES**	**NO**	**Comments**
Is this tool appropriate for use in intervention research studies?		X	Further research is needed on its psychometric properties in PD population before it is used as a valid outcome measure in PD intervention

			research. However, this tool has good construct and face validity as comprehensive measure of PD clinical symptoms and effect on daily function; therefore further research is warranted on its test psychometrics.

REFERENCES

Schenkman M, McFann K, Barón A. PROFILE PD: profile of function and impairment level experience with Parkinson disease--clinimetric properties of a rating scale for physical therapist practice. *Journal Of Neurologic Physical Therapy: JNPT* [serial online]. December 2010;34(4):182-192.

Cutson T, Sloane R, Schenkman M. Development of a clinical rating scale for persons with Parkinson's disease. *Journal Of The American Geriatrics Society*. June 1999;47(6):763-764.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Purdue Pegboard Test	
Reviewer: Jeffrey Hoder and Terry Ellis	**Date of review:** 4/20/2012

ICF domain (check all that apply):

_____ Body structure __X_ Body function __X_ Activity _____ Participation ____ environment

Construct/s measured (check all that apply):

Body structure and Function	Activity	Participation
___Aerobic capacity/endurance ___Ataxia ___Cardiovascular/pulmonary status ___Cognition _X_Coordination (non-equilibrium) ___Dizziness ___Dual Tasks ___Fatigue ___Flexibility _X_Muscle performance ___Muscle tone / spasticity ___Pain ___Sensory integration ___Somatosensation _X_Other: Dexterity	___Balance/falls ___Bed mobility ___Gait (include stairs) ___High Level mobility ___Transfers ___Wheelchair skills _X_Other: Fine motor	___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:

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I			**X**		Small n in studies
II		**X**			
III		**X**			
IV		**X**			
V			**X**		Small n in studies

Overall Comments:	Strong psychometrics. It is valid and reliable. It has been used in medication trials (Tan,2003), post neurosurgery (Pal,2000) and to measure dexterity during off times in PD (Brown, 1998). It was used to test dexterity during dual task performance (Proud, 2010). Dexterity was measured with and without a dual task in PD: dominant and

<table>
<tr><td></td><td colspan="4">non-dominant hand with and without dual task (serial 7). (Proud, 2010). Significant difference between number of pegs placed by PD subjects versus non-PD (n=22, PD, n=22 controls; mean age=64 yrs old, mean mH&Y=2).

Time to accomplish test: 30 seconds. Correlated strongly to UPDRS total and motor (Proud, 2010). Dexterity decreases with increased severity of disease.</td></tr>
<tr><td>Overall Comments:</td><td colspan="4">Cost $110-150 (9 hole peg test wooden: $60- Rolyan plastic $80)

Established norms like the 9 hole peg test. Normative data was established on factory workers who performed manual tasks for their occupation. (Tiffin, 1948).</td></tr>
<tr><td>Entry-Level Criteria</td><td colspan="2">Students should learn to administer tool</td><td colspan="2">Students should be exposed to tool (e.g. to read literature)</td><td>Comments</td></tr>
<tr><td rowspan="2">Should this tool be required for entry level curricula?</td><td>YES</td><td>NO</td><td>YES</td><td>NO</td><td rowspan="2"></td></tr>
<tr><td></td><td>X</td><td></td><td>X</td></tr>
<tr><td>Research Use</td><td colspan="2">YES</td><td colspan="2">NO</td><td>Comments</td></tr>
<tr><td>Is this tool appropriate for use in intervention research studies?</td><td colspan="2">X</td><td colspan="2"></td><td></td></tr>
</table>

REFERENCES

Brown RG, Jahanshahi M. (1998).“An unusual enhancement of motor performance during bimanual movement in Parkinson’s disease.” J Neurol Neurosurg Psychiatry; 64:813-6.

Pal, PK, Samii, A, Kishore A, et al. (2000).”Long term outcome of unilateral pallidotomy: follow up of 15 patients for 3 years.” J Neurol Neurosurg Psychiatry; 69:337-44.

Proud, EL, & Morris, ME. (2010).”Skilled Hand Dexterity in Parkinson’s Disease: Effects of Adding a Concurrent Task.” Arch Phys Med Rehabil; 91: 794-799.

Tan EK, Ratnagopal, P, Han, SY, Wong, MC. (2003).”Piribedil and bromocriptine in Parkinson’s disease: a single-blind crossover study.” Acta Neurol Scand; 107:202-6.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Push and Release Test	
Reviewer: Terry Ells PT, PhD, NCS; Laura Savella sPT and Jeffrey Hoder	**Date of review:** 4/30/2013

ICF domain (check all that apply):

_____ Body structure __X__ Body function _X__ Activity _____ Participation ____ environment

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:	_X_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:

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I			**X**		Jacobs et al, 2006 does not report H&Y stages of subjects. It is not know if patients in H&Y 1 were included in this study
II		**X**			Adequate validity and reliability in H&Y Stage 2; Excellent clinical utility
III		**X**			Adequate validity and reliability in H&Y

					Stage 3; Excellent clinical utility
IV		**X**			Adequate validity and reliability in H&Y Stage 4; Excellent clinical utility
V			**X**		Jacobs et al, 2006 does not report H&Y stages of subjects. It is not known if patients in H&Y 5 were included in this study.
Overall Comments:	The inter-rater reliability and convergent validity of the Push and Release test has shown to be adequate in persons with PD. It has also been shown to discriminate between fallers and non-fallers with PD. It has not been adequately tested in its ability to predict fall risk in PD.				

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**	Preliminary evidence suggests the P&R Test has adequate validity and inter-rater reliability in PD, although more evidence is needed. It has shown to discriminate between fallers and non-fallers with PD. It has excellent clinical utility.
		X		X	

Research Use	**YES**	**NO**	**Comments**
Is this tool appropriate for use in intervention research studies?	X		Preliminary evidence suggests the P&R Test has adequate validity and inter-rater reliability in PD, although more evidence is needed. It has shown to discriminate between fallers and non-fallers with PD. Compared to the Pull Test, it displays greater sensitivity in both "ON" and "OFF" states. Compared to the Pull Test it

			has poorer specificity in the "OFF" state but superior specificity in the "ON" state.

REFERENCES

Jacobs JV, Horak FB, et al. An alternative clinical postural stability test for patients with Parkinson's disease. *J Neurol*. 2006;253(11):1404-1413.

Valkovic P, Brozova H, et al. Push-and-release test predicts Parkinson fallers and nonfallers better than the pull test: comparison in OFF and ON medication states. *Mov Disord*. 2008;23(10):1453-1457

Parkinson Edge Outcome Measures Taskforce

Instrument name: Pull test as done on UPDRS – Retropulsive test	
Reviewer: Deb Kegelmeyer and Alicia Esposito	**Date of review:** May 2013

ICF domain (check all that apply):

_____ Body structure _x____ Body function __ ___ Activity _____ Participation ____ environment

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:	_x__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:

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I				**x**	
II				**x**	
III				**x**	
IV				**x**	
V				**x**	
Overall Comments:	Very weak psychometrics across studies.				

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		

Bloem BR, Grimbergen YA, Cramer M, Willemsen M, Zwinderman AH. Prospective assessment of falls in Parkinson's disease. Journal of neurology 2001;248:950-958.

Foreman KB, Addison O, Kim HS, Dibble LE. Testing balance and fall risk in persons with Parkinson disease, an argument for ecologically valid testing. Parkinsonism Relat Disord 2011;17:166-171.

Jacobs JV, Horak FB, Van Tran K, Nutt JG. An alternative clinical postural stability test for patients with Parkinson's disease. Journal of neurology 2006;253:1404-1413.

Visser M, Marinus J, Bloem BR, Kisjes H, van den Berg BM, van Hilten JJ. Clinical tests for the evaluation of postural instability in patients with parkinson's disease. Arch Phys Med Rehabil 2003;84:1669-1674.

Valkovic P, Brozova H, Botzel K, Ruzicka E, Benetin J. Push-and-release test predicts Parkinson fallers and nonfallers better than the pull test: comparison in OFF and ON medication states. Mov Disord 2008;23:1453-1457.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Rush Dyskinesia Scale	
Reviewer: Suzanne O'Neal, and Rosemary Gallagher	**Date of review:** 6/25/2013

ICF domain (check all that apply):

_____ Body structure _____ Body function __**X**__ Activity _____ Participation ____ environment

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:	_**X**_Balance/falls ___Bed mobility _**X**_Gait (include stairs) ___High Level mobility _**X**_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:

Recommendation Categories

Hoehn and Yahr stage	**4**	**3**	**2**	**1**	**Comments**
I			**X**		
II			**X**		
III			**X**		
IV			**X**		
V				**X**	This stage not included in Goetz et al study
Overall Comments:	Main strengths: Assesses functional disability of dyskinesia and clinimetric testing revealed relatively high inter-rater and intrarater				

	reliability. Weaknesses: Assessments are done at one time point therefore may not reflect the rest of day. Patient may also exhibit more or less dyskinesias in the clinic versus at home. The assessment is also confined to an observer rating of motor disability during specified tasks and may not capture disability related to other tasks. The various types of dyskinesias may present at different times of day and/or may depend on medication cycle.				
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 weak psychometric properties, particularly poor sensitivity to changes over time, do not suggest recommendations for teaching in an educational setting. Better psychometric properties have been found with the Unified Dyskinesia Rating.
		X		**X**	
Research Use	**YES**		**NO**		**Comments**
Is this tool appropriate for use in intervention research studies?			**X**		Goetz et al, 2013 found poor sensitivity to dyskinesia severity change over time.

REFERENCES

Colosimo C., Martinez-Martin P., et al. (2010).”Task Force Report on Scales to Assess Dyskinesia in Parkinson’s Disease: Critique and Recommendations.” Movement Disorders 25(9):1131-1142.

Goetz C.G, Stebbins G.T., et al. (1994). “Utility of an Objective Dyskinesia Rating Scale for Parkinson’s Disease: Inter- and Intrarater Reliability Assessment.” Movement Disorders 9(4):390-4.

Goetz C.G., Stebbins G.T., et al. (2013).”Which Dyskinesia Scale Best Detects Treatment Response?” Movement Disorders 28(3):341-6.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Self-Assessment Parkinson's Disease Disability Scale	
Reviewer: Suzanne O'Neal, and Rosemary Gallagher	**Date of review:** 5/1/2013
ICF domain (check all that apply): _____ Body structure _____ Body function __ **X**___ Activity _____ Participation ____ environment	

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:	_**X**__Balance/falls _**X**__Bed mobility _**X**__Gait (include stairs) _**X**__High Level mobility _**X**__Transfers ___Wheelchair skills _**X**__Other: ADLs	___Community function ___Driving ___Health and wellness ___Home management ___Leisure/Recreational activities ___Life satisfaction _X__Quality of life ___Reintegration to community ___Role function ___Shopping ___Social function ___Work ___Other:

Link to rehabmeasures.org summary:

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I		**X**			
II		**X**			
III		**X**			
IV		**X**			
V		**X**			
Overall Comments:	Excellent consistency, excellent correlation with the Sickness Impact				

	Scale (SIC68). Strong relationship with H&Y stages. Good correlation with the Beck's Depression Inventory and the Mini-Mental State Examination				
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		

REFERENCES

Biemans MA, Dekker J, van der Woude LH. (2001)."The Internal Consistency and Validity of the Self-assessment Parkinson's Disease Disability Scale". Clin Rehabil. 2001 Apr;15(2):221-8.

Brown R, MacCarthy B, et al. (1989)."Accuracy of Self-Reported Disability in Patients with Parkinsonism". Arch Neurol. 1989; 46:955-959.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Exercise Self Efficacy Scale	
Reviewer: Deb Kegelmeyer and Alicia Esposito	**Date of review:** May 2013

ICF domain (check all that apply):

_____ Body structure _____ Body function __x ___ Activity _____ Participation ____ environment

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 x___Other:	___Balance/falls ___Bed mobility ___Gait (include stairs) ___High Level mobility ___Transfers ___Wheelchair skills _x__Other: self efficacy	___Community function ___Driving _x__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:

Recommendation Categories

Hoehn and Yahr stage	**4**	**3**	**2**	**1**	**Comments**
I			**x**		
II			**x**		
III			**x**		
IV			**x**		
V			**x**		
Overall Comments:	No studies in PD, good psychometrics in other populations				

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				Unless other better studied scale exists

REFERENCES

Shaughnessy M, Michael K, Resnick B. Impact of treadmill exercise on efficacy expectations, physical activity, and stroke recovery. J Neurosci Nurs 2012;44:27-35.

Resnick B, Galik E, Gruber-Baldini AL, Zimmerman S. Perceptions and performance of function and physical activity in assisted living communities. J Am Med Dir Assoc 2010;11:406-414.

Resnick B, Orwig D, Zimmerman S et al. Testing of the SEE and OEE post-hip fracture. West J Nurs Res 2006;28:586-601.

Resnick B. A longitudinal analysis of efficacy expectations and exercise in older adults. Res Theory Nurs Pract 2004;18:331-344.

Resnick B, Luisi D, Vogel A, Junaleepa P. Reliability and validity of the self-efficacy for exercise and outcome expectations for exercise scales with minority older adults. J Nurs Meas 2004;12:235-247.

Resnick B, Jenkins LS. Testing the reliability and validity of the Self-Efficacy for Exercise scale. Nurs Res 2000;49:154-159.

Bean JF, Bailey A, Kiely DK, Leveille SG. Do attitudes toward exercise vary with differences in mobility and disability status? - a study among low-income seniors. Disabil Rehabil 2007;29:1215-1220.

Parkinson Edge Outcome Measures Taskforce

Instrument name: SF-12 version 2 (SF-12v2)	
Reviewer: Erin Hussey and Cathy Harro	**Date of review:** May, 2013

ICF domain (check all that apply):

____ Body structure ___ Body function __ _ Activity ___ Participation __X_ Environment

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 _X__Health and wellness ___Home management ___Leisure/Recreational activities ___Life satisfaction _X__Quality of life ___Reintegration to community ___Role function ___Shopping ___Social function ___Work ___Other:

Link to rehabmeasures.org summary:

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I			**X**		Lack of sufficient data on SF-12v2 following substantive revision. Clinical utility is limited by permission and fee for access and use.
II			**X**		Lack of sufficient data on SF-12v2 following substantive revision. Clinical utility is limited by permission and fee for access and use.

III			**X**		Lack of sufficient data on SF-12v2 following substantive revision. Clinical utility is limited by permission and fee for access and use.
IV			**X**		Lack of sufficient data on SF-12v2 following substantive revision. Clinical utility is limited by permission and fee for access and use.
V			**X**		Lack of sufficient data on SF-12v2 following substantive revision. Clinical utility is limited by permission and fee for access and use.

Overall Comments:	Tool is a generic health-related quality of life tool that is a shortened form of the 36-item SF-36v2. Psychometrics: Tool was revised and new normative data published in 2009. The revisions were substantive, thus previous data supporting and criticizing SF-12v1 could not be applied to this measure. Currently, there is a lack of published studied documenting psychometric properties for use with Parkinson Disease to determine if the criticisms for SF-12v1 have been remedied. In other US demographic populations, evidence indicates there is adequate to excellent psychometrics relative to reliability, internal consistency, discrimination and concurrent validity.

Overall Comments:	Clinical Utility: Access to tool is somewhat limited due to registration process required with a fee applied to acquire training manual and for specific uses. Administration of the 12-item survey is efficient (5 minutes). Survey administered as a questionnaire and can be self-administered or completed through examiner interview.

	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**	May be cost prohibitive; limited evidence to support use at entry level for this population.
		X		X	

Research Use	YES	NO	Comments
Is this tool appropriate for use in intervention research studies?		X	Based on general population data, the revised version of this item may prove to be a useful screening tool in research. At this time, there is inadequate evidence involving subjects Parkinson Disease to recommend use in research.

REFERENCES

Cheak-Zamora, N. C., Wyrwich, K. W., & McBride, T. D. (2009). Reliability and validity of the SF-12v2 in the Medical Expenditure Panel Survey. Quality of Life Research, 18 (6), 727–735.

Jakobsson, U., Westergren, A., Lindskov, S., & Hagell, P. (2012). Construct validity of the SF-12 in three different samples. *Journal Of Evaluation In Clinical Practice*, *18*(3), 560-566. doi:10.1111/j.1365-2753.2010.01623.x

Lindskov, S., Westergren, A., Hagell, P. (2007). A controlled trial of an educational programme for people with Parkinson's disease. Journal of Clinical Nursing, 16 (11C):368–376.

Tan SB, Williams AF, Kelly D. Effectiveness of multidisciplinary interventions to improve the quality of life for people with Parkinson's disease: A systematic review. Int J of Nursing Studies. 2013, accessed electronically**,** *Ware JE, Kosinski M, Keller SD (1996). A 12-Item Short-Form Health Survey: Construction of scales and preliminary tests of reliability and validity. Medical Care. 34(3):220-233. (SF-12v1)*

Ware J., Jr., Kosinski, M. Turner-Bowker, D.M. Gandek, B. (2002). User's manual for the SF-12v2 Health Survey Quality Metric Inc, Lincoln, RI. (PD EDGE reviewer unable to access this manual)

Parkinson Edge Outcome Measures Taskforce

Instrument name: SF-12 version 2 (SF-12v2)	
Reviewer: Erin Hussey and Cathy Harro	**Date of review:** May, 2013

ICF domain (check all that apply):

____ Body structure ___ Body function __ _ Activity ___ Participation __X_ Environment

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 _X__Health and wellness ___Home management ___Leisure/Recreational activities ___Life satisfaction _X__Quality of life ___Reintegration to community ___Role function ___Shopping ___Social function ___Work ___Other:

Link to rehabmeasures.org summary:

Recommendation Categories

Hoehn and Yahr stage	**4**	**3**	**2**	**1**	**Comments**
I			**X**		Lack of sufficient data on SF-36v2 following substantive revision. Clinical utility is limited by permission and fee for access and use.
II			**X**		Lack of sufficient data on SF-36v2 following substantive revision. Clinical utility is limited by permission and fee for access and use.

III			**X**		Lack of sufficient data on SF-36v2 following substantive revision. Clinical utility is limited by permission and fee for access and use.
IV			**X**		Lack of sufficient data on SF-36v2 following substantive revision. Clinical utility is limited by permission and fee for access and use.
V			**X**		Lack of sufficient data on SF-36v2 following substantive revision. Clinical utility is limited by permission and fee for access and use.

Overall Comments:	This is a generic health-related quality of life tool. Based on consensus review of an expert panel from a Movement Disorders group, the SF-36v2 is a recommended (but not highly recommended) measure for use in Parkinson Disease. This consensus was made primarily on the basis of data supporting the use of SF-36v1. <u>Psychometrics:</u> Tool was published in a revised manual in 2000 and new normative data was published in 2009. The revisions were substantive, thus previous data supporting and criticizing SF-36v1 could not be directly applied to this version 2 of the measure. Currently, there is a lack of published studied documenting psychometric properties for use with Parkinson Disease to determine if the criticisms for SF-36v1 have been remedied. In other US demographic populations, evidence indicates there is adequate to excellent psychometrics relative to reliability, internal consistency, discrimination and concurrent validity.		
Overall Comments:	<u>Clinical Utility:</u> Access to tool is somewhat limited due to registration process required with a fee applied to acquire training manual and for specific uses. Administration of the 36-item survey is efficient (10-15 minutes). Survey administered as a questionnaire and can be self-administered or completed through examiner interview.		
	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**	May be cost prohibitive; limited evidence to support use at entry level for this population.
		X		X	
Research Use	**YES**		**NO**		**Comments**
Is this tool appropriate for use in intervention research studies?			X		Based on general population data, the revised version of this item may prove to be a useful screening tool in research. At this time, there is inadequate evidence involving subjects Parkinson Disease to recommend use in research.

REFERENCES

Banks, P., Martin, C.R. (2009). The factor structure of the SF-36 in Parkinson's diseaseJournal of Evaluation in Clinical Practice 15 460–463. ISSN: 1356-1294.

Brown, C.A., Cheng, E.M., Hays, R.D., Vassar, S.D., Vickrey, B.G. (2009). SF-36 includes less Parkinson Disease (PD)-targeted content but is more responsive to change than two PD-targeted health-related quality of life measures. Quality of Life Research. 18:1219-1237.

Leonardi M, Raggi A, Pagani M, Carella F, Soliveri P, Albanese A, Romito L. (2012). Relationships between disability, quality of life and prevalence of nonmotor symptoms in Parkinson's disease. Parkinsonism & Related Disorders. 18(1): 35-39.

Martinez-Martin P., Jeukens-Visser M., Lyons K.E., et al. (2012). Health-related quality-of-life scales in Parkinson's disease: Critique and recommendations. *Mov. Disord.* 2011;26(13):2371–2380. doi:10.1002/mds.23834

Nilsson MG, Drake AM, Hagell P. (2010). Assessment of fall-related self-efficacy and activity avoidance in people with Parkinson's disease. BMC Geriatrics.10:78

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): 733-746.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Single leg stance or "One-legged stance test"	
Reviewer: Jeffrey Hoder and Terry Ellis	**Date of review:** 4/20/2012

ICF domain (check all that apply):

_____ Body structure _____ Body function __**X**_ Activity _____ Participation ____ environment

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 _X_Muscle performance ___Muscle tone / spasticity ___Pain ___Sensory integration ___Somatosensation ___Other:	_X_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:

Recommendation Categories

Hoehn and Yahr stage	**4**	**3**	**2**	**1**	**Comments**
I			X		Extensive normative data has been established with this test.
II			X		
III			X		
IV				X	
V				X	

Overall Comments:	**Instructions:** Stand on the preferred leg with eyes open and hands on hips, looking straight ahead. The trial was started when the foot left

	the ground. The trial was stopped when (1) the subject's foot touched the ground or stance leg, (2) the arms swung away from their hips, or (3) reached a maximal time of 30 seconds. (Jacobs, 2006)					
Overall Comments:	Cut-off time of 10 seconds provided the highest sensitivity and specificity for history of one or more falls (75% of those that had a h/o falls exhibited OLS time of 10 seconds or less (high sensitivity); 74% of non-fallers exhibited OLS time of > 10 seconds (high specificity). 67 subjects with PD with 65 age-matched controls (mean age of 67+-12 years; PD 10+-6 yrs) (Smithson, 1998). For the one-leg stance test, a cut-off time of 10 s provided the best combination of sensitivity and specificity for fall history in the PD subjects, consistent with a previous report by Smithson et al who reported that PD subjects with a history of falling, on average, exhibited one-leg stance times of under 10 s, and PD subjects without a history of falling, on average, exhibited one-leg stance times of about 15 s. (Jacobs, 2006). OLS was not significantly associated with falls in 71 subjects with iPD. (Mak, 2009). Significantly shorter OLS time (40%) than age-matched controls in 72 subjects with PD (12 single fallers, 13 multiple fallers) and 74 controls (6 fallers). No significant difference in OLS time in PD fallers vs. non-fallers. (Mak, 2010). ***Point of concern:** the Average time of SLS for age 80 in healthy older adults is < 10 seconds (Springer, 2007). This may not be a valid predictor of falls in individuals over age 80. Follow up studies after Jacobs (Mak, 2009,2010) failed to identify 10 seconds as an accurate cut-off to discriminate fallers from non-fallers.					
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	**YES**	**NO**	**YES**	**NO**		

required for entry level curricula?		X		X	
Research Use	**YES**		**NO**		**Comments**
Is this tool appropriate for use in intervention research studies?	X				

Jacobs, JV, Horak, FB, Tran, VK, & Nutt, JG. (2006). "Multiple balance tests improve the assessment of postural stability in subjects with Parkinson's disease." J Neurol Neurosurg Psychiatry. March; 77(3): 322-326.

Mak, MKY & Pang, MYC. (2009). "Balance confidence and functional mobility are independently associated with falls in people with Parkinson's disease." J Neurol; 256:742-749.

Mak, KY & Pang, MYC. (2010). "Parkinsonian single fallers versus recurrent fallers: different fall characteristics and clinical features." J Neurol 257:1543-1551.

Smithson F, Morris ME, Iansek R. Performance on clinical tests of balance in Parkinson's disease. Phys Ther 1998;78:577–92.

Springer, BA, Marin, R, Cyhan, T, Roberts, H, & Gill, NW. (2007). "Normative values for the unipedal stance test with eyes open and closed." J Geriatr Phys Ther; 30(1):8-15.

Parkinson Edge Outcome Measures Taskforce

Instrument name: St. Louis University Mental Status Exam	
Reviewer: Terry Ellis PT, PhD, NCS; Laura Savella sPT and Jeffrey Hoder	**Date of review:** 4/30/13

ICF domain (check all that apply):

_____ Body structure _X__ Body function _____ Activity _____ Participation ____ environment

Construct/s measured (check all that apply):

Body structure and Function	Activity	Participation
___Aerobic capacity/endurance ___Ataxia ___Cardiovascular/pulmonary status _X_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: None

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I			**X**		No studies in persons with PD ; excellent validity and reliability in an older adult, veteran population.
II			**X**		No studies in persons with PD; excellent validity and reliability in an older adult, veteran population.
III			**X**		No studies in persons with PD; excellent

					validity and reliability in an older adult, veteran population.
IV			**X**		No studies in persons with PD; excellent validity and reliability in an older adult, veteran population.
V			**X**		No studies in persons with PD; excellent validity and reliability in an older adult, veteran population.
Overall Comments:	No studies have analyzed psychometric properties of the SLUMS in a population with Parkinson's Disease. A majority of studies examining this measure in veteran and older adults, over 60 years, revealed good to excellent psychometric properties.				

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 is useful in the older adult population and may be more sensitive than the MMSE at detecting Mild Neurocognitive Impairments in that population; and therefore may be appropriate for students to be exposed to. However, it has not been tested in patients with PD.
		X		X	
Research Use	**YES**		**NO**		**Comments**
Is this tool appropriate for use in intervention research studies?			X		The psychometric properties of the tool have not been studied in patients with PD.

REFERENCES

Tariq SH, Tumosa N, Chibnall JT, Perry MH, Morley JE. Comparison of the Saint Louis University Mental Status Examination and the Mini-Mental State Examination for detecting

dementia and mild neurocognitive disorder-A pilot study. Am J Geriatr Psychiatry. 2006;14(11):900–910.

Cao L, Hai S, Lin X, Shu D, Wang S, Yue J. The Saint Louis University Mental Status Examination, the Mini-Mental State Examination, and the Montreal Cognitive Assessment in detection of cognitive impairment. Journal of the American Medical Directors Association. 2012;13(7):626–629.

Cummings-Vaughn L, Cruz-Oliver D, Malmstrom T, Tumosa N, Morley J. The Veterans Affairs Medical Center Saint Louis University Mental Status Examination comparison study. Alzheimer's & Dementia. 2012;8(4):P485.

Feliciano L, Horning S, Klebe K, et al. Utility of the SLUMS as a cognitive screening tool among a non-veteran sample of older adults. [published online ahead of print February 6 2013]. Am J Geriatr Psychiatry. 2013. Accessed April 20, 2013.

Cruz-Oliver, D., Malmstrom, T. K., Allen, C. M., Tumosa, N., & Morley, J. E. (2012). The veterans affairs Saint Louis Universty Mental Status Exam (SLUMS Exam) and the Mini-Mental Status Exam as predictors of mortality and institutionalization. The Journal of Nutrition, Health, & Aging, 16(7), 636–641.

Brown DH, Lawson LE, McDaniel WF, Wildman RW. (2012). Relationships between the Nevada Brief Cognitive Assessment Instrument and the St. Louis University Mental Status Examination in the Assessment of Disability Applicants 1,2. Psychological Reports, 111(3), 939–951.

Raji MA, Tang RA, Heyn PC, et al. Screening for cognitive impairment in older adults attending an eye clinic. Journal of the National Medical Association. 2005;97(6):808–14.

Stewart S, O'Riley A, Edelstein B, Gould C. A preliminary comparison of three cognitive screening instruments in long-term care: the MMSE, SLUMS, and MoCA. Clinical Gerontologist. 2012;35(1):57–75.

Morley JE, Tumosa N. Saint Louis University Mental Status Examination (SLUMS). Aging Successfully. 2002;XII:4.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Step-Up Test	
Reviewer: Suzanne O'Neal and Rosemary Gallagher	**Date of review:** 6/25/2013
ICF domain (check all that apply): _____ Body structure __**X**___ Body function __**X**___ Activity _____ Participation ____ environment	

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:	_**X**__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:

Recommendation Categories

Hoehn and Yahr stage	**4**	**3**	**2**	**1**	**Comments**
I			**X**		
II			**X**		
III			**X**		
IV			**X**		
V			**X**		

Overall Comments:	• No studies with use of this test with the PD population. Only one study done with use on stroke population, however good psychometric properties in reliability. • Not to be confused with the Step 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**	Insufficient data available in the PD population to recommend for entry level curricula
		x		**x**	
Research Use	**YES**		**NO**		**Comments**
Is this tool appropriate for use in intervention research studies?			**x**		Insufficient data available in the PD population to recommend for use in research

REFERENCES

Tyson, S., DeSouza, L.(2004).”Reliability and validity of functional balance tests post stroke”. Clinical Rehabilitation 2004;18(8):916-923.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Stops Walking While Talking Test	
Reviewer: Jeffrey Hoder and Terry Ellis	**Date of review:** 4/20/2013

ICF domain (check all that apply):

_____ Body structure _____ Body function _**X**_ Activity _____ Participation ____ environment

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 _**X**_Dual Tasks ___Fatigue ___Flexibility ___Muscle performance ___Muscle tone / spasticity ___Pain ___Sensory integration ___Somatosensation ___Other:	___Balance/falls ___Bed mobility _**X**_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:

Recommendation Categories

Hoehn and Yahr stage	**4**	**3**	**2**	**1**	**Comments**
I				X	
II				X	
III				X	
IV				X	
V				X	
Overall Comments:	Poor sensitivity in identifying fallers in PD without cognitive impairment. Further research needs to be done to see if there is value in this test for individuals with PD with cognitive impairment or				

	depression.				
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 related to PD. There may be some value related to elderly with MCI.
		X		X	
Research Use	**YES**		**NO**		**Comments**
Is this tool appropriate for use in intervention research studies?			X		

REFERENCES

Lundin-Olsson, 1997: 58 institutionalized residents, cognitive impairment and depression were not excluded. Subjects were able to walk with or without aids, 12 stopped walking when beginning a conversation. 10 fell during 6 mo follow up. Walk from home room to assessment, did they stop walking when talking. Observation. Specificity = 95%, sensitivity = 48%. Positive predictive value = 83%; negative predictive value = 76%.

Bloem, 2000: 38 iPD subjects, 35 controls. SWWT was abnormal in 4 patients (2 fallers, 2 non-fallers). 14 iPD reported 119 falls, 5 controls reported 7 falls. Within PD group: SWWT poor sensitivity (14.3% and adequate specificity (91.7%) Poor predictor of falls in PD. Patients with cognitive impairment were excluded.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Supine to Stand Test	
Reviewer: Terry Ellis PT, PhD, NCS; Laura Savella sPT and Jeffrey Hoder	**Date of review:** 4/30/2013

ICF domain (check all that apply):

_____ Body structure _____ Body function __X__ Activity _____ Participation ____ Environment

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 __X__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:

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I				**X**	No data on the validity or reliability of this measure for persons with PD.
II				**X**	No data on the validity or reliability of this measure for persons with PD.
III				**X**	No data on the validity or reliability of this measure for persons with PD.
IV				**X**	No data on the validity or reliability of

					this measure for persons with PD
V				**X**	No data on the validity or reliability of this measure for persons with PD.
Overall Comments:	Only one study (Alexander et al, 2000) has examined test-retest reliability in disabled geriatrics population. Although some normative data exists for persons with PD, there are no studies examining validity or reliability of this measure in this population. Evidence of ceiling effects in the early stages (H&Y 1-2.5).				

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 limited evidence investigating the validity or reliability of this tool in persons with PD.
		X		X	

Research Use	**YES**	**NO**	**Comments**
Is this tool appropriate for use in intervention research studies?		X	There is limited evidence investigating the validity or reliability of this tool in persons with PD.

REFERENCES

Alexander NB, Galecki AT, Nyquist LV, Hofmeyer MR, Grunawalt JC, Grenier ML, Medell JL. Chair and bed rise performance in ADL-impaired congregate housing residents. *J Am Geriatr Soc*. 2000;48(5):526-533.

Schenkman M, Morey M, Kuchibhatla M. Spinal flexibility and balance control among community-dwelling adults with and without Parkinson's disease. *J Gerontol A Biol Sci Med Sci*. 2000; 55(8):M441-5.

Schenkman M, Ellis T, Christiansen C, Barón AE, Tickle-Degen L, Hall DA, Wagenaar R, Profile of functional limitations and task performance among people with early- and middle-stage Parkinson Disease. *Phys Ther*. 2011;91(9):1339-1354.

Schenkman M, Cutson TM, Kuchibhatla M, Chandler J, Pieper CF, Ray L Laub KC. Exercise to improve spinal flexibility and function for people with Parkinson's disease: a randomized,

controlled trial. *J Am Geriatr Soc*. 1998;46(10):1207-16.

Whitson HE, Sanders LL, Pieper CF, Morey MC, Oddone EZ, Gold DT, Cohen HJ. Correlation between symptoms and function in older adults with comorbidity. *J Am Geriatr Soc*. 2009;57(4):676-82.

Morey MC, Schenkman M, Studenski SA, et al. Spinal-flexibility-plus-aerobic versus aerobic-only training: effect of a randomized clinical trial on function in at-risk older adults. *J Gerontol A Biol Sci Med Sci.* 1999;54:M335–342.

Gold DT, Shipp KM, Pieper CF, et al. Group treatment improves trunk strength and psychological status in older women with vertebral fractures: results of a randomized, clinical trial. *J Am Geriatr Soc.* 2004;52:1471–1478.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Timed Backwards Walk	
Reviewer: Suzanne O'Neal and Rosemary Gallagher	**Date of review:** May 2013

ICF domain (check all that apply):

_____ Body structure __**x**___ Body function __ ___ Activity _____ Participation ____ environment

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:	_**X**__Balance/falls ___Bed mobility _**X**__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:

Recommendation Categories

Hoehn and Yahr stage	**4**	**3**	**2**	**1**	**Comments**
I			**X**		
II			**X**		
III			**X**		
IV			**X**		
V				**X**	
Overall Comments:	Correlated with the Berg Balance scale and UPDRS				

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**	Although it has predictive ability to determine walking difficulty in high-functioning adults, there are other tests that are far superior in predicting falls (more multi-dimensional tests such as the Mini-BESTest).
		x		**x**	
Research Use	**YES**		**NO**		**Comments**
Is this tool appropriate for use in intervention research studies?			**x**		

REFERENCES

Duncan R., Earhart G., (2012) "Should One Measure Balance or Gait to Best Predict Falls among People with Parkinson Disease?". Parkinson's Disease. Epub 2012 Oct 31.

Hackney M., Earhart G., (2009)."Backward Walking in Parkinson Disease". Movement Disorders 24(2):218-223.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Timed Up and Go (TUG)	
Primary Reviewer: Rosemary Gallagher, PT, DPT, GCS **Secondary Reviewer:** Suzanne O'Neil, PT, DPT, NCS	**Date of review:** 4/2013

ICF domain (check all that apply):

_____ Body function/structure __X___ 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:	_X__Balance/falls ___Bed mobility _X__Gait (include stairs) ___High Level mobility _X__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:

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I	**X**				Although no ceiling effects are noted for the TUG in people with PD, most studies include Stage 1 in their psychometrics. Nocera et al, 2013, states that the predictive value of the TUG in people with PD is in line with that of healthy older adults.
II	**X**				

III	**X**				
IV				**X**	
V				**NA**	Not tested in this stage
Overall Comments:	Must be ambulatory but may use an assistive device				

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				

References

Balash, Y., Peretz, C., Leibovich, G.,Herman, T., Hausdorff, J. M., Giladi, N. (2005). Falls in outpatients with Parkinson's disease, Frequency, impact and identifying factors. *J Neuro*l(252);1310-1315.

Bennie, S., Bruner, K., Dizon, A., Fritz, H., Goodman, B., Peterson, S. (2003). Measurements of Balance: comparison of the Timed "Up and Go" Test and Functional ReachTest with the Berg Balance Scale. *J. Phys Ther. Sci.* (15);93-97

Brusse, K. J., Zimdars, S., et al. (2005). "Testing functional performance in people with Parkinson disease." Physical Therapy 85(2): 134-141.

Bello-Haas, V., Klassen, L., et al. (2011). "Psychometric Properties of Activity, Self-Efficacy, and Quality-of-Life Measures in Individuals with Parkinson Disease." Physiotherapy Canada 63(1): 47-57.

Dibble, L. E. and Lange, M. (2006). "Predicting falls in individuals with Parkinson disease: a reconsideration of clinical balance measures." J Neurol Phys Ther 30(2): 60-67.

Foreman, K. B., Addison, O., et al. (2011). "Testing balance and fall risk in persons with Parkinson disease, an argument for ecologically valid testing." Parkinsonism Relat Disord 17(3): 166-171.

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." Physical Therapy 91(1): 114-121.

Kerr, G.K., Worringham, C.J., Cole, M.H., Lacherqz, P.F., Wood, J.M., Silburn, P.A. (2010). Predictors of future falls in Parkinsons's disease. *Neurology* (75) 116-124.

Mak, M.K.Y., Pang, M.Y.C. (2009). Balance confidence and functional mobility are independently associated with falls in people with Parkinson's disease. *J Neuro*(256); 742-749.

Morris, S., Morris, M. E., et al. (2001). "Reliability of measurements obtained with the Timed "Up & Go" test in people with Parkinson disease." Physical Therapy 81(2): 810-818.

Nocera, J., Stegemller, E.L., Malaty, I., Okun, M. Marsiske, M., Hass, C.(2013). Using the Timed Up and Go Test in a clinical setting to predict falling in Parkinson's disease. Accepted Date 2/27/13. To appear in: *Archives of Phys Med & Rehab*.

Shenkman, M., Ellis, T., Christiansen, C., Baron, A.E., Tickle-Degnen, L., Hall, D.A., Wagenaar, R. (2011). Profile of functional limitations and task performance among people with early and middle stage Parkinson disease. *Phys Ther*. (91):9; 1339-1354.

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): 733-746.

Tanji, H., Gruber-Baldini, A.L. et al(2008). A comparitive study of physical Performance measures in Parkinson's Disease. *Mov't Disorders*, 23(13); 1897-1905.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Timed Up and Go Cognitive and Manual	
Primary Reviewer: Rosemary Gallagher, PT, DPT, GCS **Secondary Reviewer: Suzanne O'Neil, PT, DPT, NCS**	**Date of review: 11/2013**

ICF domain (check all that apply):

___X__ Body function/structure __X___ Activity __X___ 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 _X__Dual Tasks ___Fatigue ___Flexibility ___Muscle performance ___Muscle tone / spasticity ___Pain ___Sensory integration ___Somatosensation ___Other:	_X__Balance/falls ___Bed mobility _X_Gait (include stairs) ___High Level mobility _X_Transfers ___Wheelchair skills ___Other:	_X_Community function ___Driving ___Health and wellness ___Home management ___Leisure/Recreational activities ___Life satisfaction ___Quality of life ___Reintegration to community _X_Role function ___Shopping _X__Social function ___Work ___Other:

Link to rehabmeasures.org summary:

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I				**X**	Not tested in this population
II			**X**		
III			**X**		
IV			**X**		
V				**X**	Not tested in this population
Overall Comments:	• Good psychometrics for the TUG-Cog and TUG Manual in a healthy elderly population, and the TUG has been shown to be a				

	reliable and valid tool to use in individuals with PD. Despite lack of extensive psychometric data for the TUG Cog and TUG Manual in individuals with PD, recommend these tests as a dual task measure for those with PD secondary to the reliability and validity of the TUG, TUG Cog and TUG Manual in the healthy elderly population. More research needs to be performed on these measures on people with PD. • In PD, changes in gait under dual task conditions are proportional to the complexity of the secondary task performed. (Campbell et al 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**	
		X	X		
Research Use	**YES**		**NO**		**Comments**
Is this tool appropriate for use in intervention research studies?	X				

References

Campbell CM, Rowse JL, Cioi MA, Shumway-Cook A (2003). The effect of cognitive demand on Timed Up and Go performance in older adults with and without Parkinson Disease. *Neurology Report*, 27(1):2-7.

Galletly R, and Brauer SG (2005). Does the type of concurrent task affect preferred and cued gait in people with Parkinson's disease? Australian Journal of Physiotherapy, 51: 175-180.

Hofheinz, M. and Schusterschitz, C. (2010). "Dual task interference in estimating the risk of falls and measuring change: a comparative, psychometric study of four measurements." Clin Rehabil 24(9): 831-842. Find it on PubMed

LaPoint LL, Stierwalt JAG, Maitland CG (2010). Talking while walking: Cognitive loading and injurous falls in Parkinson's disease. *Int'l J of Speech-Language Pathology*, 12(5):455-459.

Lundin-Olsson L, Nyberg L, Gustafson Y (1998). Attention, frailty, and falls: the effect of a manual task on basic mobility. *J of the American Geriatrics Society* 46(6).

Maranhao-Fiho PA, Maranhao ET, lima MA, da Silva MM (2011). Rethinking the neurological examination II Dynamic balance assessment. *Arq Neuropsiquiatr*, 69(6): 959-963.

O'Shea S, Morris ME, Iansek R (2002). Dual task interference during gait in people with Parkinson's disease: Effects of motor versus cognitive secondary tasks. *Phys Ther*, 82(9); 888-897.

Rockwood, K., Awalt, E., et al. (2000). "Feasibility and measurement properties of the functional reach and the timed up and go tests in the Canadian study of health and aging." Journals of Gerontology. Series A, Biological Sciences and Medical Sciences 55(2): M70-73. Find it on PubMed

Shumway-Cook, A., Brauer, S., et al. (2000). "Predicting the probability for falls in community-dwelling older adults using the Timed Up & Go Test." Phys Ther 80(9): 896-903. Find it on PubMed

Yogev G, Giladi N, Peretz C, Springer S, Simon ES, Hausdorf J. (2005). Dual tasking, gait rhythmicity, and Parkinson's disease: Which aspects of gait are attention demanding? European J of Neuroscience,, 22: 1248-1256.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Tinetti Performance Oriented Mobility Assessment (POMA) / Tinetti Mobility Test	
Reviewer: Erin Hussey and Cathy Harro	**Date of review:** May, 2013
ICF domain (check all that apply): _____ Body structure ___ Body function __X_ Activity ___ Participation ___ Environment	

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:	_X__Balance/falls ___Bed mobility _X__Gait (include stairs) _ __High Level mobility _X__Transfers (sit-stand) ___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:

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I			**X**		Good clinical utility; insufficient evidence using this stage to rule out ceiling effect.
II		**X**			Good clinical utility; Adequate to excellent psychometrics to support use as a screening tool for falls risk; Insufficient evidence to support for use to detect

					responsiveness.
III		**X**			Good clinical utility; Adequate to excellent psychometrics to support use as a screening tool for falls risk; Insufficient evidence to support for use to detect responsiveness.
IV		**X**			Good clinical utility; Adequate to excellent psychometrics to support use as a screening tool for falls risk; Insufficient evidence to support for use to detect responsiveness.
V				**X**	Insufficient evidence using this stage to rule out floor effect
Overall Comments:	Psychometrics: well-established cut score that is comparable across elderly populations with and without Parkinson Disease. Adequate to excellent concurrent validity with gait speed and other balance indicators. Published evidence demonstrates mixed results and lack of strength of evidence or expert consensus relative to responsiveness and the gait component of the measure demonstrates ceiling effect.				
Overall Comments:	Clinical Utility: Efficient screening tool, completed in about 10 minutes				

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**	Tool is useful as a screening tool for falls risk across multiple populations, including mid-stages of Parkinson Disease.
		X		X	

Research Use	**YES**	**NO**	**Comments**
Is this tool appropriate for use in intervention research studies?		X	Compared to other options for balance research, this tool shows consistency of cut-off score, but lacks strength for SEM, MDC, and MCID, thus likely to not provide robust

			responsiveness data. Relative to other options for gait assessment, this tool is less discriminating, more prone to ceiling effect, and less responsive.

REFERENCES

Baloh, R. W., Ying, S. H., & Jacobson, K. M. (2003). A longitudinal study of gait and balance dysfunction in normal older people. Archives of Neurology, 60(6), 835.

Behrman, A. L., Light, K. E., & Miller, G. M. (2002). Sensitivity of the Tinetti Gait Assessment for detecting change in individuals with Parkinson's disease. Clinical Rehabilitation, 16(4), 399-405.

Cipriany-Dacko, L. M., Innerst, D., Johannsen, J., & Rude, V. (1997). Interrater reliability of the Tinetti Balance Scores in novice and experienced physical therapy clinicians. [Research Support, Non-U.S. Gov't]. Archives of Physical Medicine and Rehabilitation, 78(10), 1160-1164.

Contreras, A., & Grandas, F. (2012). Risk of Falls in Parkinson's Disease: A Cross-Sectional Study of 160 Patients. *Parkinson's Disease (20420080)*, 1-10. doi:10.1155/2012/362572

Corriveau, H., Hebert, R., Raiche, M., & Prince, F. (2004). Evaluation of postural stability in the elderly with stroke. [Comparative Study Research Support, Non-U.S. Gov't]. Archives of Physical Medicine and Rehabilitation, 85(7), 1095-1101.

Daly, J. J., Roenigk, K., Holcomb, J., Rogers, J. M., Butler, K., Gansen, J., . . . Ruff, R. L. (2006). A randomized controlled trial of functional neuromuscular stimulation in chronic stroke subjects. [Randomized Controlled Trial Research Support, U.S. Gov't, Non-P.H.S.]. Stroke, 37(1), 172-178. doi: 10.1161/01.STR.0000195129.95220.77

Faber, M. J., Bosscher, R. J., & van Wieringen, P. C. (2006). Clinimetric properties of the performance-oriented mobility assessment. Phys Ther, 86(7), 944-954.

Gray WK, Hildreth A, Bilclough JA, Wood BH, Baker K, Walker RW. (2009). Physical assessment as a predictor of mortality in people with Parkinson's disease: A study over 7 years. *Movement Disorders.* 24(13):1934–1940.

Harada, N., Chiu, V., Damron-Rodriguez, J., Fowler, E., Siu, A., & Reuben, D. B. (1995). Screening for balance and mobility impairment in elderly individuals living in residential care

facilities. [Research Support, Non-U.S. Gov't Research Support, U.S. Gov't, P.H.S.]. Physical Therapy, 75(6), 462-469.

Kegelmeyer, D. A., Kloos, A. D., Thomas, K. M., & Kostyk, S. K. (2007). Reliability and validity of the Tinetti Mobility Test for individuals with Parkinson disease. [Validation Studies]. Physical Therapy, 87(10), 1369-1378. doi: 10.2522/ptj.20070007

Kloos, A. D., Bello-Haas, V. D., Thome, R., Cassidy, J., Lewis, L., Cusma, T., & Mitsumoto, H. (2004). Interrater and intrarater reliability of the Tinetti Balance Test for individuals with amyotrophic lateral sclerosis. Journal of Neurologic Physical Therapy, 28(1), 12.

Ko, Y. M., Park, W. B., Lim, J. Y., Kim, K. W., & Paik, N. J. (2009). Discrepancies between balance confidence and physical performance among community-dwelling Korean elders: a population-based study. International Psychogeriatrics, 21(04), 738-747.

Köpke, S., & Meyer, G. (2006). The Tinetti test. Zeitschrift fur Gerontologie und Geriatrie, 39(4), 288-291.

Lin, M. R., Hwang, H. F., Hu, M. H., Wu, H. D., Wang, Y. W., & Huang, F. C. (2004). Psychometric comparisons of the timed up and go, one-leg stand, functional reach, and Tinetti balance measures in community-dwelling older people. [Comparative Study Research Support, Non-U.S. Gov't]. Journal of the American Geriatrics Society, 52(8), 1343-1348. doi: 10.1111/j.1532-5415.2004.52366.x

Mitchell, K. D., & Newton, R. A. (2006). Performance-oriented mobility assessment (POMA) balance score indicates need for assistive device. Disabil Rehabil Assist Technol, 1(3), 183-189.

Protas, E. J., Harris, C., Moch, C., & Rusk, M. (2000). Sensitivity of a clinical scale of balance and gait in frail nursing home residents. Disabil Rehabil, 22(8), 372-378.

Shore, W. S., DeLateur, B. J., Kuhlemeier, K. V., Imteyez, H., Rose, G., & Williams, M. A. (2005). A comparison of gait assessment methods: Tinetti and GAITRite electronic walkway. Journal of the American Geriatrics Society, 53(11), 2044-2045.

Soyuer, F., & Ozturk, A. (2007). The effect of spasticity, sense and walking aids in falls of people after chronic stroke. Disability and Rehabilitation, 29(9), 679-687. doi: 10.1080/09638280600925860

Sterke, C. S., Huisman, S. L., Van Beeck, E. F., Looman, C. W. N., & Van Der Cammen, T. J. M. (2010). Is the Tinetti Performance Oriented Mobility Assessment (POMA) a feasible and valid predictor of short-term fall risk in nursing home residents with dementia? International Psychogeriatrics, 22(2), 254.

Thomas, J. I., & Lane, J. V. (2005). A pilot study to explore the predictive validity of 4 measures of falls risk in frail elderly patients. Archives of Physical Medicine and Rehabilitation, 86(8), 1636-1640. doi: 10.1016/j.apmr.2005.03.004

Tinetti, M. E. (1986). Performance-oriented assessment of mobility problems in elderly patients. Journal of the American Geriatrics Society.

vaniersel, M., Benraad, C. M., & Olderikkert, M. M. (2007). Validity and reliability of quantitative gait analysis in geriatric patients with and without dementia. Journal of the American Geriatrics Society, 55(4), 632-633.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Trunk Impairment Scale (TIS)	
Primary Reviewer: Rosemary Gallagher, PT, DPT, GCS **Secondary Reviewer:** Suzanne O'Neal, PT, DPT, NCS	**Date of review:** 2/2013

ICF domain (check all that apply):

___X__ Body function/structure ___X__ Activity _____ Participation

Construct/s measured (check all that apply):

Body structure and Function	Activity	Participation
___Aerobic capacity/endurance ___Ataxia ___Cardiovascular/pulmonary status ___Cognition _X__Coordination (non-equilibrium) ___Dizziness ___Dual Tasks ___Fatigue ___Flexibility _X__Muscle performance ___Muscle tone / spasticity ___Pain ___Sensory integration ___Somatosensation ___Other:	__X_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:

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I			**X**		
II			**X**		
III			**X**		
IV			**X**		
V				**X**	
Overall Comments:	The small sample size (PD n=26, Controls n=26) with small numbers of PD in stages II=IV (Stage II=7, stage 2.5= 7, stage III= 11, stage				

	IV=1), make it difficult to recommend an ideal stage for use of 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**	
		X		X	
Research Use	**YES**		**NO**		**Comments**
Is this tool appropriate for use in intervention research studies?			X		The TIS discriminated between early PD and controls on the coordination subscale but people with PD reached ceiling effects on the static and dynamic sitting balance subscales. However, the static and dynamic sitting balance subscales did discriminate between early and late stages. Further research is needed regarding: reliability, measurement error, predictive validity, and responsiveness before this measure can be recommended for clinical or use in research.

References

Di Monaco, M., Trucco, M., et al. (2010). "The relationship between initial trunk control or postural balance and inpatient rehabilitation outcome after stroke: a prospective comparative study." Clinical Rehabilitation 24(6): 543-554. Find it on PubMed

Fujiwara, T., Liu, M., et al. (2004). "Development of a new measure to assess trunk impairment after stroke (trunk impairment scale): its psychometric properties." American Journal of Physical Medicine and Rehabilitation 83(9): 681-688. Find it on PubMed

Verheyden, G., Nieuwboer, A., et al. (2007). "Trunk performance after stroke: an eye catching predictor of functional outcome." Journal of Neurology, Neurosurgery and Psychiatry 78(7): 694-698.

Verheyden, G., Nieuwboer, A., et al. (2005). "Discriminant ability of the Trunk Impairment Scale: a comparison between stroke patients and healthy individuals." Disability and Rehabilitation 27(17): 1023-1028. Find it on PubMed

Verheyden, G., Nieuwboer, A., et al. (2004). "The Trunk Impairment Scale: a new tool to measure motor impairment of the trunk after stroke." Clinical Rehabilitation 18(3): 326-334. Find it on PubMed

Verheyden, G., Vereeck, L., et al. (2006). "Trunk performance after stroke and the relationship with balance, gait and functional ability." Clinical Rehabilitation 20(5): 451-458. Find it on PubMed

Verheyden G., Willems A., Ooms L., Nieuwboer A. (2007). Validity of the Trunk Impairment Scale as a measure of trunk performance in people with Parkinson's disease. *Arch Phys MedRehabil*, 88, 1304-1308. Available from Ovid Medline or CINAHL.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Unified Dyskinesia Rating Scale (UDysR Scale)	
Reviewer: Cathy Harro and Erin Hussey	**Date of review**: June 2013

ICF domain (check all that apply):

____ Body structure _X_ Body function _X_ Activity ___ Participation ___ Environment

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 _X_ Muscle tone / spasticity ___Pain ___Sensory integration ___Somatosensation _X_ Other: dyskinesia, dystonias	___Balance/falls ___Bed mobility _X_ Gait (include stairs) _ __High Level mobility ___Transfers ___Wheelchair skills _X_Other: ADLs	___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:

Recommendation Categories

Hoehn and Yahr stage	**4**	**3**	**2**	**1**	**Comments**
I				**X**	Not tested in participants in stage I in published studies.
II			**X**		Fair clinical utility (15+ minutes and training required); limited research on test psychometrics; only a few studies from original research team who developed the instrument.

III			**X**		Fair clinical utility; limited research on test psychometrics; only a few studies from original research team who developed the instrument.
IV			**X**		Fair clinical utility; limited research on test psychometrics; only a few studies from original research team who developed the instrument.
V				**X**	Test has not been examined in stage 5 PD.

Overall Comments:	UDysR Scale has only been tested by original research team (Goetz et al, team of international movement disorder experts), with support for excellent inter-rater, intra-rater and test retest reliability; as well as excellent internal consistency. Goetz also supports temporal stability of UDysRS score during ON or OFF times of medications. Research is lacking regarding concurrent validity, discriminative validity and content validity, no MDC. Only one study on responsiveness to drug trial. Further research is needed before strong clinical recommendations can be made for its use in clinical practice across PD stages of disease to assess presence and effects of dyskinesia during ON and OFF states in persons with PD. Currently this tool has more direct research application as potentially sensitive measure to detect change (positive or negative) in dyskinesia during drug/ surgical/or exercise based interventions.
Overall Comments:	**Clinical Utility**: requires 15 minutes to administer in face to face interview and direct observation. Training is required and available for fee with DVD-based training tape, including a certification exercise.

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**	Limited research on this tool at this time; inadequate to support its use in entry level DPT education.
		X		X	
Research Use	**YES**		**NO**		**Comments**

Is this tool appropriate for use in intervention research studies?	**	X	Further research is needed on its psychometric properties in PD population before it is used as outcome measure in PD rehabilitation research. **Has good potential as a reliable measure with good face validity to assess dyskinesia in interdisciplinary studies (drug trials, DBS trials, etc…)

REFERENCES

Colosimo C, Martínez-Martín P, Goetz C, et al. Task force report on scales to assess dyskinesia in Parkinson's disease: Critique and recommendations. *Movement Disorders* [serial online]. July 15, 2010;25(9):1131-1142.

Goetz C, Nutt J, Stebbins G. The Unified Dyskinesia Rating Scale: presentation and clinimetric profile. *Movement Disorders* [serial online]. December 15, 2008;23(16):2398-2403.

Goetz C, Nutt J, Stebbins G, Chmura T. Teaching program for the Unified Dyskinesia Rating Scale. *Movement Disorders* [serial online]. July 15, 2009;24(9):1296-1298.

Goetz C, Stebbins G, Bronzova J, et al. Temporal stability of the Unified Dyskinesia Rating Scale. *Movement Disorders* [serial online]. December 2011;26(14):2556-2559.

Goetz C, Stebbines GT, Chung KA et al. Which Dyskinesia scale best detects treatment response? Movement Disorders 2013; 28 (3):341-346

Suppa A, Marsili L, Belvisi D et al. Lack of LTP-like plasticity in primary motor cortex in Parkinson's disease. Experimental Neurology 2011, 227: 296-301

Parkinson Edge Outcome Measures Taskforce

Instrument name: UPDRS	
Reviewer: Alicia Esposito and Deb Kegelmeyer	**Date of review:** 4/30/13

ICF domain (check all that apply):

___X__ Body structure _____ Body function __ X___ Activity ___X__ Participation _____ environment

Construct/s measured (check all that apply):

Body structure and Function	Activity	Participation
___Aerobic capacity/endurance ___Ataxia ___Cardiovascular/pulmonary status _x__Cognition _x__Coordination (non-equilibrium) ___Dizziness ___Dual Tasks ___Fatigue ___Flexibility ___Muscle performance ___Muscle tone / spasticity _x__Pain ___Sensory integration ___Somatosensation ___Other:	___Balance/falls ___Bed mobility _x__Gait (include stairs) ___High Level mobility _x__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:

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I	**X**				
II	**X**				
III	**X**				
IV	**X**				
V	**X**				
Overall Comments:	Recommended by the Movement Disorder Society Excellent psychometric properties as compared to the original UPDRS. Good clinical utility with updated versions as more items can be				

	completed in questionnaire form without need for clinician. Free for personal.individual use but increased cost when utilized for research purposes				
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				Gold standard for research purposes

REFERENCE

Gallagher, D. et al (2012). "Validation of the MDS UPDRS part I for non motor symptoms in parkinson's disease." Movement Disorders 27(1) 79-83.

Goetz, C.G. et al (2008). "Movement disorder society-sponsored revision of the unified parkinson's disease rating scale (MDS-UPDRS): scale presentation and clinimetric testing results." Movement Disorders 23(15) 2129-2170.

Goetz, C.G. et al (2010). "Teaching program for the movement disorder

society-sponsored revision of the unified parkinson's disease rating scale: (MDS-UPDRS)." Movement Disorders 5(9) 1190-1194.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Walk While Talking Test	
Primary Reviewer: Rosemary Gallagher, PT, DPT, GCS **Secondary Reviewer:** Suzanne O'Neal, PT, DPT, NCS	**Date of review:** 4/2013

ICF domain (check all that apply):

___X__ Body function/structure ___X__ Activity ___X__ Participation

Construct/s measured (check all that apply):

Body structure and Function	Activity	Participation
___Aerobic capacity/endurance ___Ataxia ___Cardiovascular/pulmonary status _X__Cognition ___Coordination (non-equilibrium) ___Dizziness _X__Dual Tasks ___Fatigue ___Flexibility ___Muscle performance ___Muscle tone / spasticity ___Pain ___Sensory integration ___Somatosensation ___Other:	_X_Balance/falls ___Bed mobility _X__Gait (include stairs) ___High Level mobility ___Transfers ___Wheelchair skills ___Other:	_X__Community function ___Driving ___Health and wellness ___Home management ___Leisure/Recreational activities ___Life satisfaction ___Quality of life _X__Reintegration to community ___Role function ___Shopping _X__Social function ___Work ___Other:

Link to rehabmeasures.org summary:

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I			**X**		Lack of psychometric data in PD
II			**X**		Lack of psychometric data in PD
III			**X**		Lack of psychometric data in PD
IV			**X**		Lack of psychometric data in PD
V				**X**	Must be ambulatory
Overall Comments:	• Verghese et al, 2002: WWT is highly predictive of falls in a healthy older population				

	• Verghese et al, 2012: WWT may better predict frailty than disability (as compared to the SPPB) in healthy CDOA • The shorter WWT (13 sec), is a reliable alternative to the SPPB (5 min) in busy clinical settings for healthy CDOA • LaPoint et al (2010): Controls adapted a strategy of increased double support time during dual task while PD did not. This may have placed those with PD at greater risk for falls. • Camicioli et al (1998): Significant increased # of steps in PD but no significant increase in time compared to controls				
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 in PD
		X		X	
Research Use	**YES**		**NO**		**Comments**
Is this tool appropriate for use in intervention research studies?			X		Lack of psychometric data in PD

References

Verghese J, Buschke H, Viola L, Katz M, Hall C, Kuslansky G, Li[ton R, (2002). Validity of divided attention tasks in predicting falls in older individuals: A preliminary study. *JAGS*, 50;1272-157

Verghese J, Holtzer R, Lipton RB, Wang C. (2012). Mobility stress test approach to predicting frailty, disability, and mortality in high-functioning older adults. *JAGS*, 60;1901-1905.

Verghese J. (2010). Identifying frailty in high functioning older adults with normal mobility. *Age Aging*, 39;382-399.

Liu-Ambrose T, Katarynych LA, Ashe MC, Nagamatsu LS, Hsu CL (2009). Dual-task gait performance among community-dwelling senior women: The role of balance confidence and executive functions. *J Gerontology A Biol Med Sci*, 64A(9): 975-982.

Camicioli R, Oken BS, Sexton G, Kaye JA, Nutt JG (1998). Verbal fluency task affects gait in Parkinson's disease with motor freezing. *J Geriatr Psychiatry Neurol*, 11:181-185

LaPoint LL, Stierwalt JAG, Maitland CG (2010). Talking while walking: Cognitive loading and injurous falls in Parkinson's disease. *Int'l J of Speech-Language Pathology*, 12(5):455-459.

O'Shea S, Morris ME, Iansek R (2002). Dual task interference during gait in people with Parkinson's disease: Effects of motor versus cognitive secondary tasks. *Phys Ther*, 82(9); 888-897.

Parkinson Edge Outcome Measures Taskforce

Instrument name: World Health Organization-Quality of Life-Bref (WHOQOL-BREF)	
Reviewer: Erin Hussey and Cathy Harro	**Date of review:** May, 2013

ICF domain (check all that apply):

____ Body structure ___ Body function __ _ Activity _X__ Participation ___ Environment

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:	_X__Community function ___Driving ___Health and wellness ___Home management ___Leisure/Recreational activities _X__Life satisfaction _X__Quality of life ___Reintegration to community _X__Role function ___Shopping ___Social function ___Work ___Other:

Link to rehabmeasures.org summary:

Recommendation Categories

Hoehn and Yahr stage	**4**	**3**	**2**	**1**	**Comments**
I			**X**		Adequate to excellent psychometrics involving other populations, but lacking sufficient published evidence to recommend for use in Parkinson Disease
II			**X**		Same
III			**X**		Same
IV			**X**		Same
V			**X**		Same

Overall Comments:	Psychometrics: adequate to excellent reliability, correlation with other factors (e.g., age, depression, number of caregivers, disease duration); one study demonstrated adequate discrimination between Parkinson and non-Parkinson elderly. Current available studies lack sufficient evidence relative to reliability, validity, and responsiveness for Parkinson Disease and there are not any documented SEM, MDC, or MCID. A Movement Disorders Task force (2011) identified WHOQOL-BREF as a suggested (but not a recommended) measure based on reasonable psychometrics identified in other populations but insufficient evidence specifically for Parkinson Disease.				
Overall Comments:	Clinical Utility: there is no cost to use the tool. Compared to the WHOQOL-100, this is an efficient tool, requiring about 15 minutes to administer and score using the manual to calculate transformed scores.				
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				Despite recommendations against current clinical use for those with Parkinson Disease, the strength of psychometrics in other populations suggest this may be an appropriate selection for the domains addressed.

REFERENCES

Arun MP, Bharath S, Pal PK, Singh G. (2011). Relationship of depression, disability, and quality of life in Parkinson's disease: a hospital-based case-control study. *Neurology India*. 59(2):185–189. doi:10.4103/0028-3886.79133

Bonomi, A., Patrick, D., et al. (2000). "Validation of the United States' version of the World Health Organization Quality of Life (WHOQOL) instrument." Journal of Clinical Epidemiology 53(1): 1-12.

Chapin, M. H. and Holbert, D. (2010). "Employment at closure is associated with enhanced quality of life and subjective well-being for persons with spinal cord injuries." Rehabilitation Counseling Bulletin 54(1): 6-14.

Chiu, W. T., Huang, S. J., et al. (2006). "Use of the WHOQOL-BREF for evaluating persons with traumatic brain injury." Journal of neurotrauma 23(11): 1609-1620.

Edwards, B. and O'Connell, B. (2003). "Internal consistency and validity of the Stroke Impact Scale 2.0 (SIS 2.0) and SIS-16 in an Australian sample." Quality of Life Research 12(8): 1127-1135.

Harper, A. (1996). Introduction, Administration, Scoring and Generic Version of the Assessment. Geneva, World Health Organization. Huang, T. T. and Wang, W. S. (2009). "Comparison of three established measures of fear of falling in community-dwelling older adults: psychometric testing." Int J Nurs Stud 46(10): 1313-1319.

Hirayama M.S., Gobbi S., Gobbi L.T.B., Stella F. (2008). Quality of life (QoL) in relation to disease severity in **Brazilian** Parkinson's patients as measured using the WHOQOL-BREF. *Archives of Gerontology and Geriatrics.* 46(2):147–160.

Hwang, H., Liang, W., et al. (2003). "Suitability of the WHOQOL-BREF for community-dwelling older people in Taiwan." Age and Ageing 32(6): 593.

Jang, Y., Hsieh, C.-L., et al. (2004). "A validity study of the WHOQOL-BREF assessment in persons with traumatic spinal cord injury." Arch Phys Med Rehabil 85: 1890-1895.

Karimlou, M., Zayeri, F., et al. (2011). "Psychometric properties of the Persian version of the World Health Organization's quality of life questionnaire (WHOQOL-100)." Arch Iran Med 14(4): 281-287.

Lin, M. R., Chiu, W. T., et al. (2010). "Longitudinal changes in the health-related quality of life during the first year after traumatic brain injury." Arch Phys Med Rehabil 91(3): 474-480.

Lin, M. R., Hwang, H. F., et al. (2007). "Comparisons of the brief form of the World Health Organization Quality of Life and Short Form-36 for persons with spinal cord injuries." Am J Phys Med Rehabil 86(2): 104-113.

Lucas-Carrasco, R., Skevington, S. M., et al. (2011). "Using the WHOQOL-BREF in persons with dementia: a validation study." Alzheimer Dis Assoc Disord 25(4): 345-351.

Martinez-Martin P., Jeukens-Visser M., et al. (2011). Health-related quality-of-life scales in Parkinson's disease: Critique and recommendations. *Movement Disorders*. 26(13):2371–2380.

Schestatsky P, Zanatto VC, Margis R, et al. (2006) Quality of life in **Brazilian** sample of patients with Parkinson's disease and their caregivers. *Rev. Bras. Psiquiatr*. 28(3):209–211.

The WHOQOL Group, 1995. The World Health Organization Quality of life assessment (WHOQOL): Position paper from the World Health Organization. Soc. Sci. Med. 41, 1403.

Zalihic, A., Markotic, V., et al. (2010). "Differences in quality of life after stroke and myocardial infarction." Psychiatr Danub 22(2): 241-248.

Zalihic, A., Markotic, V., et al. (2010). "Gender and quality of life after cerebral stroke." Bosn J Basic Med Sci 10(2): 94-99.

Parkinson Edge Outcome Measures Taskforce

Instrument name: Walk While Talking Test	
Reviewer: Rosemary Gallagher and Suzanne O'Neal	**Date of review:** 4-2013

ICF domain (check all that apply):

_____ Body structure _____ Body function __X___ Activity __X___ Participation
____ environment

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 __X_Dual Tasks ___Fatigue ___Flexibility ___Muscle performance ___Muscle tone / spasticity ___Pain ___Sensory integration ___Somatosensation ___Other:	__X_Balance/falls ___Bed mobility _X__Gait (include stairs) ___High Level mobility ___Transfers ___Wheelchair skills ___Other:	__X_Community function ___Driving ___Health and wellness ___Home management ___Leisure/Recreational activities ___Life satisfaction ___Quality of life __X_Reintegration to community ___Role function ___Shopping ___Social function ___Work ___Other:

Link to rehabmeasures.org summary:

Recommendation Categories

Hoehn and Yahr stage	4	3	2	1	Comments
I	**X**				Good measure to pick up possible deficiencies in early stages of disease
II	**X**				
III	**X**				
IV	**X**				
V				**X**	Must be ambulatory
Overall Comments:	Verghese et al, 2002:				

	WWT is highly predictive of falls in a healthy older population **Verghese et al, 2012:** -WWT may better predict frailty than disability (as compared to the SPPB) in healthy CDOA -The shorter WWT (13 sec), is a reliable alternative to the SPPB (5 min) in busy clinical settings for healthy CDOA Verghese et al, 2008: WWT not associated with frailty in CDOA LaPoint et al (2010): Controls adapted a strategy of increased double support time during dual task while PD did not. This may have placed those with PD at greater risk for falls.				
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 is very quick and easy to conduct. Useful in a busy clinic
		X		X	
Research Use	**YES**		**NO**		**Comments**
Is this tool appropriate for use in intervention research studies?	X				

REFERENCES

Camicioli R, Oken BS, Sexton G, Kaye JA, Nutt JG (1998). Verbal fluency task affects gait in Parkinson's disease with motor freezing. *J Geriatr Psychiatry Neurol*, 11:181-185

LaPoint LL, Stierwalt JAG, Maitland CG (2010). Talking while walking: Cognitive loading and injurous falls in Parkinson's disease. *Int'l J of Speech-Language Pathology*, 12(5):455-459.

Liu-Ambrose T, Katarynych LA, Ashe MC, Nagamatsu LS, Hsu CL (2009). Dual-task gait performance among community-dwelling senior women: The role of balance confidence and executive functions. *J Gerontology A Biol Med Sci*, 64A(9): 975-982.

O'Shea S, Morris ME, Iansek R (2002). Dual task interference during gait in people with Parkinson's disease: Effects of motor versus cognitive secondary tasks. *Phys Ther*, 82(9); 888-897.

Verghese J, Buschke H, Viola L, Katz M, Hall C, Kuslansky G, Li[ton R, (2002). Validity of divided attention tasks in predicting falls in older individuals: A preliminary study. *JAGS*, 50;1272-157

Verghese J, Holtzer R, Lipton RB, Wang C. (2012). Mobility stress test approach to predicting frailty, disability, and mortality in high-functioning older adults. *JAGS*, 60;1901-1905.

Verghese J. (2010). Identifying frailty in high functioning older adults with normal mobility. *Age Aging*, 39;382-399.