Instrument name: Dix-Hallpike Maneuver										
Review	er: Karen H Lambe	rt PT, DP	T, NCS				Date of review: 4 July 13			
Linda B	Bernadette Horn, Pi	T, DscPT,	MHS, N	ICS						
ICF dor	nain (check all that	apply):								
x E	Body function/struc	ture		Activity	/ -	Part	ticipation			
Construct/s measured (check all that apply):										
		ction			ctivity		Participation			
Body structure and Function x_DizzinessDual TasksMuscle performanceSensory integrationSomatosensationSpatial Orientation _x_VertigoVOR/ Gaze stabilityOther:Other:			Gai	lance/fa it (inclu- gh Leve ansfers her:	de staiı	-	Community functionDrivingHealth and wellnessHome managementLeisure/Recreational activitiesLife satisfactionQuality of lifeRole functionShoppingSocial functionWorkOther:			
	Link to rehabmeas			ary:						
	Recommendation									
	Acuity	4	3	2		1	Comments			
Acute=	0-6 Weeks	x								
Chronic	c = > 6 Weeks	×	$\top$							
Overall	l Comments:	the curr	st has excellent psychometric properties when performed correctly; is rent gold standard for assessment of BPPV in any patient (acute or c) and must be included in the evaluation of patients with complaints tional vertigo							
Diagnostic Categories 4 3 2						N/A*	Comments			
l- Perip	heral Dysfunction			x			The Dix-Hallpike Maneuver should			
							be performed to rule out BPPV			
II-Centr	ral Dysfunction			X			The Dix-Hallpike Maneuver should			
							be performed to rule out BPPV			
III-BPP\	V						The Dix-Hallpike Maneuver must			

	ı						
							med when BPPV is
						suspected	I due to the high
						occurrenc	ce of postierior canal BPPV
						– if this te	est cannot be performed
						as describ	ed due to cervical range
						of motion	issues (of other
						complicat	ions), an adaptation to
						the test (	such as the side-lying
						test) mus	t be performed
IV-Other			x			The Dix-H	allpike Maneuver should
						be perfor	med to rule out BPPV
*Not applicable: Outcome	e measu	re not re	lated to [	Diagnos	tic Cat	egories	
Overall Comments:		•	Due to t	he frec	uency	of BPPV that	has been detected in
			individu	als who	had n	ot previously	reported symptoms, the
			VEDGE t	ask for	ce reco	mmends per	forming positional testing
			to rule o	ut pos	tional v	vertigo when	assessing any patient
			that con	nplaint	of diz	ziness and ba	lance impairments.
		•	The Dix-	Hallpik	e test i	s relatively qu	uick and easy to perform
		•	Some tr	aining i	s recon	nmended (th	rough coursework or
				_		-	que and interpretation
			(as impr	oper p	ositioni	ng could resu	ult in a false negative test)
		•					
		•	If a patie	ent is u	nable to	o attain prop	er positioning for the Dix-
			•				uch as the sidelying test)
			should b			(	, , , , , , , , , , , , , , , , , , , ,
				-  -			
		Studen	ts should	Stud	dents sl	hould be	Comments
Entry-Level Criteria		learn to	)	ехр	osed to	tool (e.g.	
		admini	ster tool	to r	ead lite	rature)	
Chauld this to all ha		VEC	NO	VEC		NO	Martinaliana
Should this tool be		YES	NO	YES		NO	Vertigo is very common
required for entry level		Х		x			in patients of any age.
curricula?		^		^			The entry level clinician
							should be able to
							perform a Dix-Hallpike
							to test for BPPV.
Research Use		YES		NO			Comments
Is this tool appropriate		Х					
for use in intervention							
research studies?							
1	Ī						

Is there a need for additional research on this measure? If so, where are the gaps?	X		This may be the most researched component of our entire vestibular eval and we certainly have answered more questions about posterior canal BPPV than we have about other aspects of the vestibular world. Future research may focus on:  • Central positional nystagmus in dix-hallpike positioning • Silent BPPV/BPPV without
Alternate outcome measures	for consideration to	Link	BPPV without nystagmus
assess like constructs			
1. Side-lying Test			
2.			
Additional information on this measure).	measure can be found	l l at <u>www.rehabmeasures</u>	org (insert specific link to

Alvarenga G.A., Barbosa, M.A. (2011). "Benign paroxysmal positional vertigo without nystagmus: diagnosis and treatment." Braz J Otorhinolaryngol. 77(6): 799-804.

Burston, A., Mossman, S., et al. (2012). "Are there diurnal variations in the results of the Dix-Hallpike manoeuvre?" J Clin Neurosci 19(3): 415-417. <u>Find it on PubMed</u>

Cohen, H. S. (2004). "Side-lying as an alternative to the Dix-Hallpike test of the posterior canal." Otol Neurotol 25(2): 130-134. <u>Find it on PubMed</u>

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Gordon, C. R., Levite, R., et al. (2004). "Is posttraumatic benign paroxysmal positional vertigo different from the idiopathic form?" Arch Neurol 61(10): 1590. Find it on PubMed

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Kerrigan MA, Costigan MF, Blatt KJ, Mathiason MA, Domroese ME. "Prevalence of Benign Paroxysmal Positional Vertigo in the young adult population." PMR Epub anead of print 26June2013.

Noda, K., Ikusaka, M., et al. (2011). "Predictors for benign paroxysmal positional vertigo with positive Dix-Hallpike test." Int J Gen Med 4: 809-814. Find it on PubMed

Oghalai JS, Manolidis S, Barth JL, Stewart MG, Jenkins HA. (2000) "Unrecognized benign paroxysmal positional vertigo in elderly patients." Otol Head Neck Surg 122 (630)

Pollak, L., Davies, R. A., et al. (2002). "Effectiveness of the particle repositioning maneuver in benign paroxysmal positional vertigo with and without additional vestibular pathology." Otology & neurotology 23(1): 79. Find it on PubMed

Instrument name: Side-ly	ing Test	for BPP\	/						
Reviewer: Karen Lamber DScPT, MHS, NCS	t, PT, DP	Γ, NCS a	nd Li	nda	В. Но	rn, PT,		Date of review: 2/17/13	
ICF domain (check all tha	t apply):						J.		
X Body function/str	ucture		Ac	tivit	:у	Pa	rtic	ipation	
Construct/s measured (c		hat app	ly):						
Body structure and Fur				ctivity			Participation		
_X_DizzinessDual TasksMuscle performanceSensory integrationSomatosensationSpatial Orientation _X_ VertigoVOR/ Gaze stabilityOther:Other:	Balance/fallsGait (include stairs) High Level Mobility TransfersOther:						Community functionDrivingHealth and wellnessHome managementLeisure/Recreational activitiesLife satisfactionQuality of lifeRole functionShoppingSocial functionWorkOther:		
Link to rehabmea	sures.or	g summ	ary:						
Recommendation	n Catego	ries							
Acuity	4	3		2	2 1		Co	mments	
Acute= 0-6 Weeks				X					
Chronic = > 6 Weeks				X					
Overall Comments:		s measure is an appropriate substitution for a Dix-Hallpike Maneuver en cervical ROM restrictions prevent performing a Dix-Hallpike							
Diagnostic Categories	4	3	2		1	N/A*	С	Comments	
I- Peripheral Dysfunction					x				
II-Central Dysfunction					x				
III-BPPV		х							
IV-Other				х					
*Not applicable: Outcom	e measu	re not re	elate	d to	Diagr	ostic Cate	gor	ies	
Overall Comments:			The side-lying test can be used as an alternative to the Dix-Hallpike maneuver when the patient cannot tolerate the latter due to						

		postura	l restrictio	ons, medical precautions, or discomfort.							
		There have been very few studies looking specifically at the Side-Lying Test.  As with any positional test, true BPPV may be missed due to the transient nature of this diagnosis among other reasons									
		Students should  Students should be  Comments									
Entry-Level Criteria		learn to		exposed to		Comments					
Littly-Level Citteria			ster tool	to read lite							
Should this tool be required for entry level		YES	NO	YES	NO						
curricula?		Χ		X							
Research Use		YES		NO		Comments					
Is this tool appropriate for use in intervention research studies?		X									
Is there a need for additional research on this measure? If so, where are the gaps?		X				Only one study (Cohen 2004) looking at the validity of this measure. A critical appraisal (Halker 2008) found many threats to the validity within the article.					
Alternate outcome measure assess like constructs	es for c	onsidera	ition to	Link							
1.Dix Hallpike Maneuver											
2.											
3.											
Additional information on the	nis mea	sure can	be found	at <u>www.reh</u>	abmeasures.	org (insert specific link to					
measure).											

Cohen HS (2004). "Side-Lying as an Alternative to the Dix-Hallpike Test of the Posterior Canal." Otology and Neurology 25:130-134.

Halker RB, Barrs DM, et al (2008). "Establishing a Diagnosis of Benign Paroxysmal Positional Vertigo Through the Dix-Hallpike and Side-Lying Maeuvers: A Critically Appraised Topic." The Neurologist 14(3): 201-204.

Helminski JO, Janssen I, et al (2008). "Daily Exercise Does Not Prevent Recurrence of Benign Paroxysmal Positional Vertigo." Otology and Neurology 29: 976-981

Helminski JO, Zee DS, et al (2010). "Effectiveness of Particle Repositioning Maneuvers in the Treatment of Benign Paroxysmal Positional Vertigo: A Systematic Review." Physical Therapy 90(5): 663-678.

Lee S, Kim JS (2010). "Benign Paroxysmal Positional Vertigo." J Clin Neurol 6:51-63

Noda K, Ikusaka M, et al (2011). "Predictors for benign paroxysmal positional vertigo with positive Dix-Hallpike test." International Journal of General Medicine 4:809-814

Instrument name: Activities Specific Balance Confidence Scale										
Reviewe	er: Jennifer Fay, P1	Γ, DPT, N	ICS and	Trac	y Ri	ce, PT	, MPH, N	CS	Date of review: July 8, 2013	
ICF dom	ain (check all that	apply):							1	
Во	ody function/struc	cture	x	_ Act	tivit	Ту	x	Part	ticipation	
Constru	ct/s measured (ch	eck all t	hat app	ly):						
Body	structure and Fun	ction				ctivity		Participation		
Muso Sens Somo Spat Vert	Tasks cle performance ory integration atosensation tial Orientation cigo d/ Gaze stability er:		_x_Balance/falls _xGait (include stairs) High Level Mobility _x_ TransfersOther:						_x_Community functionDrivingHealth and wellness _x_Home management _x_Leisure/Recreational activitiesLife satisfactionQuality of life _x_Role function _x_ShoppingSocial function _WorkOther:	
ı	Link to rehabmea	sures.or	g summ	ary:						
1	Recommendation	Catego	ries							
	Acuity	4	3		2		1	С	omments	
Acute= 0	)-6 Weeks		X							
Chronic	= > 6 Weeks		x							
Overall (	Comments:		_				tric prop ible to pr		es for vestibular population, is free ders.	
Diagno	ostic Categories	4	3	2		1	N/A*		Comments	
I- Periph	eral Dysfunction			х						
II-Centra	al Dysfunction			х						
III-BPPV			x							
IV-Other	•			х						
*Not app	plicable: Outcome	measu	re not re	elate	d to	Diagn	ostic Cat	ego	ries	
Overall (	Comments:	than ve	Measure has been studied in variety of diagnostic populations other than vestibular and has demonstrated good psychometric properties. This measure has good clinical utility however limited							

	researd	research in the vestibular population.								
Entry-Level Criteria	learn t	nts should o ister tool	exposed	s should be to tool (e.g. iterature)	Comments					
Should this tool be required for entry level	YES	NO	YES	NO						
curricula?	х		х							
Research Use	YES		NO		Comments					
Is this tool appropriate for use in intervention research studies?	х									
Is there a need for additional research on this measure? If so, where are the gaps?	X				Additional research into reliability and responsiveness with the vestibular population.					
Alternate outcome measures f assess like constructs	or conside	ration to	Link							
1.Falls Efficacy Scale (FES)										
2. Turkish Version		Karapolat et al., 2010								
3.										
Additional information on this r measure).	neasure ca	n be found	at <u>www.re</u>	ehabmeasures	.org (insert specific link to					

Alghwiri, A. A., Marchetti, G. F., & Whitney, S. L. (2011). Content comparison of self-report measures used in vestibular rehabilitation based on the international classification of functioning, disability and health. *Physical Therapy*, *91*(3), 346-357.

Beninato, M., Portney, L. G., et al. (2009). "Using the International Classification of Functioning, Disability and Health as a framework to examine the association between falls and clinical assessment tools in people with stroke." Physical Therapy 89(8): 816-825. Find it on PubMed

Botner, E. M., Miller, W. C., et al. (2005). "Measurement properties of the Activities-specific Balance Confidence Scale among individuals with stroke." Disability and Rehabilitation 27(4): 156-163. Find it on PubMed

Clendaniel, R. A. (2000). Outcome measures for assessment of treatment of the dizzy and balance disorder patient. *Otolaryngologic Clinics of North America*, 33(3), 519-533.

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. Find it on PubMed

Duracinsky, M., Mosnier, I., Bouccara, D., Sterkers, O., & Chassany, O. (2007). Literature review of questionnaires assessing vertigo and dizziness, and their impact on patients' quality of life. *Value in health*, *10*(4), 273-284.

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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

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Karapolat, H., Eyigor, S., Kirazli, Y., Celebisoy, N., Bilgen, C., & Kirazli, T. (2010). Reliability, validity, and sensitivity to change of Turkish Activities-specific Balance Confidence Scale in patients with unilateral peripheral vestibular disease. *International Journal of Rehabilitation Research*, *33*(1), 12-18.

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Morgan, M. T., Friscia, L. A., Whitney, S. L., Furman, J. M., & Sparto, P. J. (2013). Reliability and validity of the Falls Efficacy Scale-International (FES-I) in individuals with dizziness and imbalance. *Otology and Neurotology*.

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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. Find it on PubMed

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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. Find it on PubMed

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Whitney, S.L., Hudak M.T., and Marchetti G.F. (1999). "The activities-specific balance confidence scale and the dizziness handicap inventory: a comparison." Journal of Vestibular Research 9:253-259.

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. Find it on <a href="PubMed">PubMed</a>

Instrument name: Dizziness Handicap Inventory										
Review	ver: Tracy Rice, PT,	MPH, N	CS and J	enny	/ Fa	y, PT, [	OPT, NCS		Date of review: June 20, 2013	
ICF don	nain (check all that	apply):								
x_	Body function/stru	ucture	x_	A	Activ	vity	X	_ Pa	rticipation	
Constru	uct/s measured (ch	eck all t	hat app	ly):						
Body	structure and Fun	ction			Α	ctivity			Participation	
Mu:SenSonSpa	al Tasks scle performance sory integration natosensation atial Orientation rtigo R/ Gaze stability er:		Balance/falls _X_Gait (include stai High Level Mobil Transfers _X_Other: Bed mobil				lity		_X_Community functionDrivingHealth and wellness _X_Home management _X_Leisure/Recreational activitiesLife satisfactionQuality of life _X_Role function _X_Shopping _X_Social function _X_WorkOther:	
	Link to rehabmea	sures.or	g summ	ary:						
	Recommendation	Catego	ries							
	Acuity	4	3		2 1		C	Comments		
Acute=	0-6 Weeks	X								
Chronic	c = > 6 Weeks	X								
Overall	Comments:			•				•	st-intervention measures, gauging efficacy of treatment.	
Diagn	ostic Categories	4	3	2		1	N/A*	(	Comments	
I- Perip	heral Dysfunction	Χ								
II-Centr	ral Dysfunction	Х								
III-BPP\	l .	Х							Five-item BPPV subscale (Whitney et al., 2005)	
IV-Othe	er	Х								
*Not ap	oplicable: Outcome	e measu	re not re	elate	d to	Diagn	ostic Cat	ego	ries	
Overall	Comments:				e not related to Diagnostic Categories  Excellent psychometric properties to the tool and the tool has been successfully translated and validated in several languages.					

Entry-Level Criteria	learn to	Students should learn to administer tool		s should be I to tool (e.g. literature)	Comments			
Should this tool be required for entry level	YES	NO	YES	NO				
curricula?	X		X					
Research Use	YES		NO		Comments			
Is this tool appropriate for use in intervention research studies?	Х							
Is there a need for additional research on this measure? If so, where are the gaps?	and MC various	tions are the						
Alternate outcome measures assess like constructs	for consider	ation to	Link					
1. DHI-S			Jacobson & Calder, 1998					
2.Five-item BPPV subscale			Whitney et al., 2005					
3. Spanish version DHI			Perez et al., 2000					
4. Dutch Version			Vereeck et al., 2007					
5.Swedish Version			Jarlsäter, S., & Mattsson, E. (2003)					
6. Chinese Version			Poon et al., 2004					
7. German Version			Kurre et al., 2009					
Additional information on this measure).	measure car	n be found	d at <u>www.rehabmeasures.org</u> (insert specific link to					

- Alghwiri, A. A., Marchetti, G. F., & Whitney, S. L. (2011). Content comparison of self-report measures used in vestibular rehabilitation based on the international classification of functioning, disability and health. *Physical Therapy*, *91*(3), 346-357.
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Whitney, S. L., Wrisley, D. M., et al. (2004). "Is perception of handicap related to functional performance in persons with vestibular dysfunction?" Otol Neurotol 25(2): 139-143. Find it on PubMed

Instrument name: Dynam	nic Visual	Acuity	Test	_ In	strum	ented (D	AT_I)		
Reviewer: Matthew Sche	rer, PT, P	Date of review: 1 June 13	3						
Jennifer L. Stoskus, PT, M	ISPT, DPT								
ICF domain (check all tha	t apply):								
x Body function/strue	cture		_ Acti	vity		Par	cicipation		
Construct/s measured (ch	neck all tl	nat app	ly):						
Body structure and Fun	ction				ctivity		Participation		
<u>x</u> Dizziness			lance	-			Community function		
Dual Tasks			-		le stai	=	Driving		
Muscle performanceSensory integration			ign Le ansfe		Mobi	lity	Health and wellnessHome management		
Somatosensation			ansii :her:	213			Leisure/Recreational		
Spatial Orientation		0					activities		
Vertigo							Life satisfaction		
<u>x</u> VOR/ Gaze stability							Quality of life		
Other:							Role function		
							Shopping		
Other:							Social function Work		
							Other:		
							other.		
Link to rehabmea	sures.or	g summ	nary:						
Recommendation		ies	ı			_			
Acuity	4	3		2		1	Comments		
Acute= 0-6 Weeks		X					*May not be well tolerated		
							immediately post insult		
Chronic = > 6 Weeks		x					Serial measurements may be usef	useful	
							to quantify degree of central		
							compensation/ rehabilitation	า	
							response		
Overall Comments:									
	A versa	tile me	asure	e tha	at is a <sub>l</sub>	opropriate	at all stages of recovery.		
Diagnostic Categories	4	3	2		1	N/A*	Comments		
I- Peripheral Dysfunction		X							
II-Central Dysfunction		Х							
III-BPPV						X	Measure may be useful during	ing	

*Not applicable: Outcome Overall Comments:	e measur	re not rel	The DVAT axis of he specified DVAT_I m following The versa	_ I provides ad rotation a velocity thre hay provide a rehabilitation tility of some	to rule ou dysfunction Measure initial eva to rule ou dysfunction egories impairment in and the acuity eshold. In useful metricion.	may be useful during luation as a screening tool it co-morbid vestibular on information specific to the y of gaze at or above a c of central compensation the DVAT_I allow				
		<ul> <li>assessment of both predictable (active DVA) and unpredictable (passive DVA) gaze stability provides the examiner versatility to assess peripheral and central contributions to gaze stability.</li> <li>Evidence base to assess gaze stability in cardinal planes of movement yaw, pitch, RALP, and LARP under stationary conditions, and locomotor conditions provides broad insight into patient gaze stability under a broad range of functional conditions.</li> <li>Cost of some DVA_I systems may be prohibitive for small clinics or academic programs to support. Feasibility for cost may thus limit the broadest use of this testing platform.</li> </ul>								
Entry-Level Criteria		learn to	ts should o ster tool	Students s exposed to to read lite	tool (e.g.	Comments				
Should this tool be required for entry level curricula?		YES x	NO	YES	NO	- Students should learn to administer the tool if feasible for the				
						Instructional program or clinical affiliation.  -System cost varies significantly from NIH toolbox to more established commercial				

			versions of the test.  - Strong test psychometrics, well established evidence base, ease of use and overall utility of the measure for capturing aVOR function support a strong recommendation for this measure.
Research Use	YES	NO	Comments
Is this tool appropriate for use in intervention research studies?	x		- The DVAT_I provides complementary data to the GST; it is feasible (with respect to test administration time) and is non-invasive.  Measure has strong test psychometrics and has been used under a wide variety of clinical and experimental conditions.
Is there a need for additional research on this measure? If so, where are the gaps?	x		Key research gaps include:  - Use of this measure to assess the reliability of gaze stability in patient populations with comorbid vestibular deficits (e.g., mTBI).  - Convergent validity studies with measures of dynamic stability (e.g., DGI, FGA) or postural stability

				(e.g., SOT, CTSIB),		
				Convergent validity		
				between DVA-		
				Instrumented and		
				DVA- Instrumented.		
Alternate outcome measures for consideration to		Link				
assess like constructs	assess like constructs					
1. Dynamic Visual Acuity (	Non-inst	rumented)	To be established			
2. Gaze Stabilization Test			To be established			
3. Head Impulse Test		To be established				
Additional information on	this me	asure can be found	at <u>www.rehabmeasures.</u>	org (insert specific link to		
measure).						

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Schubert M.C., Migliaccio A., et al (2008). "Mechanisms of Dynamic Visual Acuity Recovery with Vestibular Rehabilitation. "Arch Phys Med Rehabil 2008;89:500-7.

Tian J., Shubayev I, Demer J., (2001) "Dynamic Visual Acuity during Yaw

Rotation in Normal and Unilaterally Vestibulopathic Humans" Ann N Y Acad Sci. Oct;942:501-4

Vital D, Hegemann S et al. (2010) "A New Dynamic Visual Acuity Test to Assess" Arch Otolaryngol Head Neck Surg. 2010;136(7):686-691

Peripheral Vestibular Function"

Ward, B. K., Mohammad, M. T., et al. (2010). "The reliability, stability, and concurrent validity of a test of gaze stabilization." J Vestib Res 20(5): 363-372.

Instrument name: Dynamic Visual Acuity_ Non-Instrumented								
Reviewer: Matthew Scherer, PT, PhD, NCS						Dat	e of review: 18 August 13	
	Jennifer L. Stoskus, PT, MSPT, DPT							
ICF domain (che	eck all that	t apply):						
Body function/structure Activity Partici						cipatio	n	
Construct/s measured (check all that apply):								
Body structur	e and Fun	ction			ctivity			Participation
x_DizzinessDual TasksMuscle performSensory interest	gration ation ntation		Balance/fallsGait (include stairs) High Level Mobility TransfersOther:				act	_Community function _Driving _Health and wellness _Home management _Leisure/Recreational civities _Life satisfaction _Quality of life _Role function _Shopping _Social function _Work _Other:
Link to	rehabmea	sures.or	g summ	ary:			<u> </u>	
Recomr	nendation	Catego	ries					
Acuity		4	3	2	1	L	Comm	ents
Acute= 0-6 Wee	ks			×			immed	not be well tolerated liately post insult
Chronic = > 6 W	eeks			x			to quai	measurements may be useful ntify degree of central nsation/rehabilitation se
Overall Comme	nts:	A versatile measure that is appropriate at all stages of recovery. Very little published research on this measure to substantiate a "Level 3" or "Level 4" strength recommendation.						
Diagnostic Cat	egories	4	3	2	1	N/A*	Comn	nents
I- Peripheral Dys	sfunction			x				ure may be useful during
							initial	bedside clinical evaluation

II-Central Dysfunction III-BPPV		×	x	measures as the HIT Not diagn	orate other "low tech" of aVOR function such and the HSN test.  ostic but may be useful to o-morbid vestibular tion with positional PPV)		
<ul><li>IV-Other</li><li>*Not applicable: Outcome m</li></ul>	neasure not re	lated to Di	<b>x</b> agnostic Cat	initial eva to rule ou dysfunction	may be useful during luation as a screening tool t co-morbid vestibular on		
Overall Comments:	•	<ul> <li>The DVAT_non- I provides impairment information specific to the axis of head rotation and the acuity of gaze at a specified frequency of head movement (if used in conjunction with metronome)</li> <li>The low cost of materials (i.e., an eye chart), ease of administration and scoring, and quick testing time make this a good clinical measure of behavioral VOR function.</li> <li>The general dearth of evidence for this measure accounts for the "Reasonable to recommend" rating vs. a stronger recommendation.</li> </ul>					
Entry-Level Criteria	learn to	ts should o ster tool	Students s exposed to to read lite	tool (e.g.	Comments		
Should this tool be required for entry level curricula?	X	NO	YES x	NO	-Feasibility and low cost for the non- instrumented DVAT makes it a good option for entry level programs.		
Research Use	YES	1	NO		Comments		
Is this tool appropriate for use in intervention research studies?	х				- The DVAT_NI has good test properties however there is limited study on		

			this measure.	
Is there a need for additional research on this measure? If so, where are the gaps?	X X		Key research gaps include:  - Validity studies in a broader cross section of patients with vestibular dysfunction Correlational analysis of DVAT_NI with instrumented measures of gaze stability (e.g., GST, DVAT-I) - Convergent validity studies with other measures of VOR performance (e.g., HIT, HSN), postural stability (e.g., SOT, CTSIB), or dynamic stability (e.g., DGI, FGA)	
Alternate outcome meass assess like constructs	ures for consideration to	Link		
Dynamic Visual Acuity (non-instrumented)		To be established		
2. Gaze Stabilization Test		To be established		
3. Head Impulse Test		To be established		
Additional information on this measure can be found at <a href="www.rehabmeasures.org">www.rehabmeasures.org</a> (insert specific link to measure).				

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Instrun	nent name: Gaze St	tabilizat	ion Test					
Review	er: Matthew Schei	rer, PT, F	PhD, NC	S			Date of review: 16 February 13	
Jennife	r L. Stoskus PT, MS	SPT, DPT	1					
ICF dor	nain (check all that	apply):						
Body function/structure Activity Participation						ticipation		
	uct/s measured (ch		hat app	•				
	structure and Fun	ction	_				Participation	
Mu Sen Son Spa Ve	al Tasks scle performance sory integration natosensation atial Orientation rtigo R/ Gaze stability ser:		Activity Balance/fallsGait (include stairs) High Level Mobility TransfersOther:			-	Community functionDrivingHealth and wellnessHome managementLeisure/Recreational activitiesLife satisfactionQuality of lifeRole functionShoppingSocial functionWorkOther:	
	Link to rehabmea	sures.or	g summ	ary:			·	
	Recommendation	Catego	ries					
	Acuity	4	3	2		1	Comments	
Acute=	0-6 Weeks			х			*May not be well tolerated	
							immediately post insult	
Chronic	c = > 6 Weeks			х			Serial measurements may be useful	
							to quantify degree of central	
							compensation/ rehabilitation	
							response	
Overall Comments:			·	·				
Diagn	ostic Categories	4	3	2	1	N/A*	Comments	
l- Perip	heral Dysfunction			X				
II-Centi	ral Dysfunction			X				
III-BPP\	/					Х	Measure may be useful during	

IV-Other  IV-Other  *Not applicable: Outcome measure not related to Diagnostic Categories  Overall Comments:  The GST provides impairment information specific to the axis of head rotation and the velocity of head movement.  GST may provide a useful metric of central compensation following rehabilitation.  Given the fixed optotype size presented during testing, the GST may be preferable to other behavioral measures of VOR function (e.g. DVA) among patients with significant comorbid visual deficits.  The unpredictable nature of the visual stimulus in the GST paradigm theoretically controls against augmented gaze stability from compensatory saccades/ vestibular catch up saccades known to be present in persons with vestibular disease during active DVA testing.
IV-Other  *Not applicable: Outcome measure not related to Diagnostic Categories  Overall Comments:  • The GST provides impairment information specific to the axis of head rotation and the velocity of head movement.  • GST may provide a useful metric of central compensation following rehabilitation.  • Given the fixed optotype size presented during testing, the GST may be preferable to other behavioral measures of VOR function (e.g. DVA) among patients with significant comorbid visual deficits.  • The unpredictable nature of the visual stimulus in the GST paradigm theoretically controls against augmented gaze stability from compensatory saccades/ vestibular catch up saccades known to be present in persons with vestibular
*Not applicable: Outcome measure not related to Diagnostic Categories  Overall Comments:  • The GST provides impairment information specific to the axis of head rotation and the velocity of head movement.  • GST may provide a useful metric of central compensation following rehabilitation.  • Given the fixed optotype size presented during testing, the GST may be preferable to other behavioral measures of VOR function (e.g. DVA) among patients with significant comorbid visual deficits.  • The unpredictable nature of the visual stimulus in the GST paradigm theoretically controls against augmented gaze stability from compensatory saccades/ vestibular catch up saccades known to be present in persons with vestibular
*Not applicable: Outcome measure not related to Diagnostic Categories  Overall Comments:  • The GST provides impairment information specific to the axis of head rotation and the velocity of head movement.  • GST may provide a useful metric of central compensation following rehabilitation.  • Given the fixed optotype size presented during testing, the GST may be preferable to other behavioral measures of VOR function (e.g. DVA) among patients with significant comorbid visual deficits.  • The unpredictable nature of the visual stimulus in the GST paradigm theoretically controls against augmented gaze stability from compensatory saccades/ vestibular catch up saccades known to be present in persons with vestibular
*Not applicable: Outcome measure not related to Diagnostic Categories  • The GST provides impairment information specific to the axis of head rotation and the velocity of head movement.  • GST may provide a useful metric of central compensation following rehabilitation.  • Given the fixed optotype size presented during testing, the GST may be preferable to other behavioral measures of VOR function (e.g. DVA) among patients with significant comorbid visual deficits.  • The unpredictable nature of the visual stimulus in the GST paradigm theoretically controls against augmented gaze stability from compensatory saccades/ vestibular catch up saccades known to be present in persons with vestibular
*Not applicable: Outcome measure not related to Diagnostic Categories  • The GST provides impairment information specific to the axis of head rotation and the velocity of head movement.  • GST may provide a useful metric of central compensation following rehabilitation.  • Given the fixed optotype size presented during testing, the GST may be preferable to other behavioral measures of VOR function (e.g. DVA) among patients with significant comorbid visual deficits.  • The unpredictable nature of the visual stimulus in the GST paradigm theoretically controls against augmented gaze stability from compensatory saccades/ vestibular catch up saccades known to be present in persons with vestibular
<ul> <li>The GST provides impairment information specific to the axis of head rotation and the velocity of head movement.</li> <li>GST may provide a useful metric of central compensation following rehabilitation.</li> <li>Given the fixed optotype size presented during testing, the GST may be preferable to other behavioral measures of VOR function (e.g. DVA) among patients with significant comorbid visual deficits.</li> <li>The unpredictable nature of the visual stimulus in the GST paradigm theoretically controls against augmented gaze stability from compensatory saccades/ vestibular catch up saccades known to be present in persons with vestibular</li> </ul>
<ul> <li>of head rotation and the velocity of head movement.</li> <li>GST may provide a useful metric of central compensation following rehabilitation.</li> <li>Given the fixed optotype size presented during testing, the GST may be preferable to other behavioral measures of VOR function (e.g. DVA) among patients with significant comorbid visual deficits.</li> <li>The unpredictable nature of the visual stimulus in the GST paradigm theoretically controls against augmented gaze stability from compensatory saccades/ vestibular catch up saccades known to be present in persons with vestibular</li> </ul>
<ul> <li>GST may provide a useful metric of central compensation following rehabilitation.</li> <li>Given the fixed optotype size presented during testing, the GST may be preferable to other behavioral measures of VOR function (e.g. DVA) among patients with significant comorbid visual deficits.</li> <li>The unpredictable nature of the visual stimulus in the GST paradigm theoretically controls against augmented gaze stability from compensatory saccades/ vestibular catch up saccades known to be present in persons with vestibular</li> </ul>
<ul> <li>following rehabilitation.</li> <li>Given the fixed optotype size presented during testing, the GST may be preferable to other behavioral measures of VOR function (e.g. DVA) among patients with significant comorbid visual deficits.</li> <li>The unpredictable nature of the visual stimulus in the GST paradigm theoretically controls against augmented gaze stability from compensatory saccades/ vestibular catch up saccades known to be present in persons with vestibular</li> </ul>
<ul> <li>Given the fixed optotype size presented during testing, the GST may be preferable to other behavioral measures of VOR function (e.g. DVA) among patients with significant comorbid visual deficits.</li> <li>The unpredictable nature of the visual stimulus in the GST paradigm theoretically controls against augmented gaze stability from compensatory saccades/ vestibular catch up saccades known to be present in persons with vestibular</li> </ul>
<ul> <li>GST may be preferable to other behavioral measures of VOR function (e.g. DVA) among patients with significant comorbid visual deficits.</li> <li>The unpredictable nature of the visual stimulus in the GST paradigm theoretically controls against augmented gaze stability from compensatory saccades/ vestibular catch up saccades known to be present in persons with vestibular</li> </ul>
function (e.g. DVA) among patients with significant comorbid visual deficits.  • The unpredictable nature of the visual stimulus in the GST paradigm theoretically controls against augmented gaze stability from compensatory saccades/ vestibular catch up saccades known to be present in persons with vestibular
<ul> <li>morbid visual deficits.</li> <li>The unpredictable nature of the visual stimulus in the GST paradigm theoretically controls against augmented gaze stability from compensatory saccades/ vestibular catch up saccades known to be present in persons with vestibular</li> </ul>
The unpredictable nature of the visual stimulus in the GST paradigm theoretically controls against augmented gaze stability from compensatory saccades/ vestibular catch up saccades known to be present in persons with vestibular
paradigm theoretically controls against augmented gaze stability from compensatory saccades/ vestibular catch up saccades known to be present in persons with vestibular
stability from compensatory saccades/ vestibular catch up saccades known to be present in persons with vestibular
saccades known to be present in persons with vestibular
I I GIOCASC GUITIE ACTIVE DAY TESTITE.
Cost of the GST system may be prohibitive for small clinics or
academic programs to support. Limiting broadest use and
application.
Chudanta shauld Chudanta shauld ba Canananta
Students should Students should be Comments
Entry-Level Criteria learn to exposed to tool (e.g. administer tool to read literature)
administer tool to read interactive)
Should this tool be YES NO YES NO - System cost, size (of
required for entry level the Smart EquiTest
curricula? X System with InVision),
and broad range
psychometric strength
characteristics (i.e.,
excellent to poor) limit
widespread use of this
measure outside of
specialized clinical or
research settings.

Research Use	YES		NO	Comments	
Is this tool appropriate for use in intervention research studies?	х			- The GST provides complementary data to the DVA in a timely and non-invasive manner.	
Is there a need for additional research on this measure? If so, where are the gaps?	X			Key research gaps include:  -Absence of studies to establish content validity using high energy head movement stimuli (e.g. using vHIT or scleral search coil as gold standards).  - Externally validated normative values by epoch in healthy control subjects.  - Incomplete characterization of performance across the spectrum of vestibular disease and severity.	
Alternate outcome measurassess like constructs	res for conside	eration to	Link		
1. Dynamic Visual Acuity (I	non-instrument	ed)	To be established		
2. Dynamic Visual Acuity (A	Active/ Passive)		To be established		
3. Head Impulse Test			To be established		
Additional information on this measure can be found at <a href="https://www.rehabmeasures.org">www.rehabmeasures.org</a> (insert specific link to measure).					

3

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Ward, B. K., Mohammad, M. T., et al. (2010). "The reliability, stability, and concurrent validity of a test of gaze stabilization." J Vestib Res 20(5): 363-372.

Whitney S, Marchetti G, Pritcher M, Furman J. (2009). Gaze stabilization and gait performance in vestibular dysfunction. Gait & Posture; 29: 194–198

Instrument name: Head Impulse Test							
Reviewer: Matthew Sche	rer, PT, P	hD, NCS	-		Date of review: 6 June 13		
Jennifer L. Stoskus, PT, M	SPT, DPT						
ICF domain (check all that	t apply):						
x Body function/strue	cture	Act	tivity	Part	ticipation		
Construct/s measured (check all that apply):							
Body structure and Fun	ction		Activity	<u> </u>	Participation		
_x_DizzinessDual TasksMuscle performanceSensory integrationSomatosensationSpatial OrientationVertigo _x_VOR/ Gaze stabilityOther:Other:		Activity Balance/fallsGait (include stairs) High Level Mobility TransfersOther:					
Link to rehabmea		•	,				
Recommendation				1			
Acuity	4	3	2	1	Comments		
Acute= 0-6 Weeks		x			Clinical HIT generally has <b>good</b> diagnostic psychometric properties (Sn, Sp, Likliood ratios) and <b>excellent</b> clinical utility /feasibility. Interpretation of the non- instrumented HIT is more challenging during acute phase of recovery.  Test psychometrics improve to <b>excellent</b> when the HIT is administered with scleral search coil (SSC) or video measurement		

Chronic = > 6 Weeks		X				techniques (vHIT). With improved resolution comes <i>poor</i> feasibility (SSC) and increased cost (SSC and vHIT).  -HIT known to elicit CS response to a rapid ipsilesional head movements even years following the insult.  -Binary (+/-) findings from the	
						clinical HIT do not provide a measure of central compensation however instrumented approaches may provide visibility of recovery as measured by aVOR gain on the ipsilesional side. (Palla and Strauman 2004)	
Overall Comments:	•	The HIT is Sn, Sp and feasible when performed as a clinical bedside test. Instrumentation improves test psychometrics though there may be an associated feasibility cost.  Scleral search coil technique has been the gold standard for HIT measurements for the last 25 years providing quantifiable data on the presence and degree of VOR deficits however; coils are invasive, expensive and impractical for clinical use (Aw 1996 a, b, Robinson 1963).  Recent improvements in VOR measurement using high speed video represent a significant development for enhancing the sensitivity and specificity of the HIT without the risks associated with more invasive measurement techniques (MacDougall et al 2009).					
Diagnostic Categories	4	3 2	2	1	N/A*	Comments	
I- Peripheral Dysfunction		x				Numerous welldesigned studies validating use of HIT in patients with peripheral dysfunction.	
II-Central Dysfunction		,	•			Isolated studies demonstrate sensitivity of the HIT to floccular/central dysfunction and brainstem strokes (Kremmyda et al 2012; Cnyrim et al 2008; Newman-Toker et al 2008).	
III-BPPV					x	Should be included as a component of a comprehensive evaluation to rule out co-morbid vestibular	

						dysfunction	on
IV-Other					х		e included as a component
					_		orehensive evaluation to
						•	o-morbid vestibular
						dysfunction	
*Not applicable: Outcome	e measu	re not rel	lated to D	iagnos	stic Cat		-
Overall Comments:		•					ng calorics, SSC and vHIT
							its with peripheral
			dysfuncti	ion (ve	stibula	r neuritis).	
		•	-				t of a comprehensive
			vestibula	r evalı	uation t	o reduce the	risk of a false positive in
			cases of	centra	l patho	logy.	·
		Charlen	ha ala a l al	Ct		h a callal la a	•
Entry Loyal Critaria		learn to	ts should			hould be	Comments
Entry-Level Criteria			ster tool	_		tool (e.g.	
		auminis	ster tooi	tor	eau iite	rature)	
Should this tool be		YES	NO	YES		NO	-Feasibility and excellent
required for entry level							specificity of the clinical
curricula?		x		х			HIT make it a strong
							measure for inclusion in
							entry-level curricula.
Research Use		YES		NO			Comments
Is this tool appropriate		х					- The clinical HIT is a Sn,
for use in intervention							Sp and feasible test
research studies?							commonly used to
							confirm vestibular
							diagnosis in a study
							sample.
							- Augmentation of test
							measurement with SSC
							or vHIT technology is
							appropriate and
							advantageous for
							improved
							characterization of
							aVOR study sample.
Is there a need for		Х					Key research gaps:
additional research on							- With emerging vHIT
this measure? If so,							technology there
	1						teeninology there

where are the gaps?			will be a need for			
			convergent validity			
			studies with			
			behavioral			
			measures of VOR			
			function including			
			DVAT and GST.			
		Link				
Alternate outcome measi	Alternate outcome measures for consideration to					
assess like constructs						
1. Dynamic Visual Acuity (	non-instrumented)	To be established				
2. Dynamic Visual Acuity		To be established				
3. Gaze Stabilization Test		To be established				
Additional information on	this measure can be found	1 at www.rehahmeasures	org (insert specific link to			
	tins measure can be round	a at <u>www.ieiiabilieasules.</u>	org (misert specific link to			
measure).						
1						

Aw ST, Haslwanter T, Halmagyi GM, Curthoys IS, Yavor RA, Todd MJ. (1996) Three-dimensional vector analysis of the human vestibuloocular reflex in response to high acceleration head rotations, I: responses in normal subjects. J Neurophysiol 76:4009–4020.

Aw ST, Halmagyi GM, Haslwanter T, Curthoys IS, Yavor RA, Todd MJ. (1996) Three-dimensional vector analysis of the human vestibuloocular reflex in response to high acceleration head rotations, II: responses in subjects with unilateral vestibular loss and selective semicircular canal occlusion. J Neurophysiol;76:4021–4030.

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Instrur	Instrument name: Head Shaking Nystagmus Test								
Primar	y Reviewer: Jennife	er L. Stos	kus PT, MS	PT, DPT			Date of review: 12 NOV 2013		
Second	dary Reviewer: Mat	thew R S	icherer PT,	PhD, NCS					
ICF do	main (check all that	apply):							
x	Body function/struc	ture	Act	ivity	Part	ticip	pation		
Constr	Construct/s measured (check all that apply):								
Body	structure and Fun	ction		Activity	/		Participation		
<u>x</u> Diz	zziness		Balance	e/falls			Community function		
Dua	al Tasks		Gait (ir	nclude stai	irs)		Driving		
Mu	iscle performance		High Level Mobility				Health and wellness		
Ser	nsory integration		Transfers				Home management		
Sor	matosensation		Other:				Leisure/Recreational activities		
Sp	atial Orientation								
Ve	rtigo						Life satisfaction		
VC	DR/ Gaze stability						Quality of life		
	her: Vestibular syste	om					Role function		
	e/imbalance	2111					Shopping		
I							Social function		
Oth	ner:						Work		
							Other:		
	Link to rehabmeas	sures.org	g summary:						
	Recommendation	Categor							
	Acuity	4	3	2	1	Co	mments		
Acute=	0-6 Weeks			x					
	c = > 6 Weeks			x					
Overal	l Comments:								

Diagnostic Categories	4	3	2	1	N/A*	Comments
I- Peripheral Dysfunction			х			Limited by strength of statistics and
						access to specialized assessment
						equipment
II-Central Dysfunction			х			Measure may be useful during
						initial evaluation as a screening tool
						to rule out co-morbid unilateral
						peripheral vestibular
						dysfunction, however, the overall
						sensitivity of this test is not high.
						- Vincini et al found HSN to be
						sensitive in 22.5% in those with
						central vestibular dysfunction,
						however this data is not strong
						enough to provide
						recommendation in this
						population.
III-BPPV				x		Measure may be useful during
						initial evaluation as a screening tool
						to rule out co-morbid unilateral
						peripheral vestibular dysfunction
IV-Other				x		Measure may be useful during
						initial evaluation as a screening tool
						to rule out unilateral peripheral co-
						morbid vestibular dysfunction
*Not applicable: Outcome	e measu	re not r	elated to	Diagno	stic Categ	gories
Overall Comments:		•	The HS	N test p	rovides i	nformation regarding peripheral
			vestibu	ılar syste	em imbal	ance
		•	Sensiti	vity of th	ne HSN te	est improves as vestibular imbalance
			increas	ses betw	een R/L	sides (as indicated with caloric
			testing	;)		
		•	Many	studies d	of HSN us	e ENG equipment or a scleral search
			coil, w	hich is n	ot utilize	d in most clinical settings; few studies
			look at	psycho	metrics u	sing infrared lenses or Frenzel
			glasses	, howev	er this ed	quipment is most commonly used in
			curren	t clinical	practice	
		•	Metho	ds used	in older s	studies included the patient actively
						hile common current practice, it is
				_		clinician perform a passive head
						e appropriate head position, velocity
	1	<u> </u>	J. IGING	5. 401		Tapa opinate near position, velocity

Entry-Level Criteria	of headshaking, and stillness of the head after headshaking.  • Overall Recommendations: The HSN test is a brief test that can be added to a clinicians testing battery, however should not be used as a stand alone test; there is higher likelihood of vestibular dysfunction when both the HSN test and Head Impulse Test are both abnormal.  Students should learn to exposed to tool (e.g. administer tool to read literature)							
Should this tool be required for entry level	YES	NO	YES	NO	- Students would benefit from learning about			
curricula?		x	х		vestibular testing battery, however use of this measure may require advanced training to ensure appropriate administration and valid interpretation of findings.			
Research Use	YES		NO		Comments			
Is this tool appropriate for use in intervention research studies?			х					
Is there a need for additional research on this measure? If so, where are the gaps?	X				Key research gaps include:  -Absence of studies to establish clinical utility; most studies looked at scleral search coil or ENG, while clinicians commonly use Frenzel glasses or infrared lenses.  -Absence of studies to establish reliability			

Alternate outcome measures for consideration to assess like constructs	Link
1. Head Impulse Test	To be established
2. Dynamic Visual Acuity (Active/ Passive)	To be established
3. Dynamic Visual Acuity (non-instrumented)	To be established
Additional information on this measure can be found measure).	at <u>www.rehabmeasures.org</u> (insert specific link to

Asawavichianda S, Fujimoto M, Mai M, Rutka J. Prevalence of head-shaking nystagmus in patients according to their diagnosis classification in a dizziness unit. *Acta Otolaryngol.* 1997; 26(1). 20-25. Find it on PubMed

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Goebel JA, Garcia P. Prevalence of post-headshake nystagmus in patients with caloric deficits and vertigo. *Otolaryngol Head Neck Surg.* 1992;106:121–7. Find it on PubMed

Hain TC, Fetter M, Zee DS. Head-shaking nystagmus in patients with unilateral peripheral vestibular lesions. *Am J Otolaryngol.* 1987 Jan-Feb;8(1):36-47. Find it on PubMed

Hall SF, Laird ME. Is head-shaking nystagmus a sign of vestibular dysfunction? *J Otolaryngal*. 1992; s21(3):209-212. Find it on PubMed.

Harvey SA, Wood DJ, Feroah TR. Relationship of the head impulse test and head-shake nystagmus in reference to caloric testing. *Am J Otol.* 1997; 18:207–13. Find it on PubMed

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Tseng HZ, Chao WY. Head-shaking nystagmus: a sensitive indicator of vestibular dysfunction. *Clin Otolaryngol.* 1997;22:549-552. Find it on PubMed

Vincini C, Casani A, Ghilardi P. Assessment of head shaking test in neuro-otological practice. *ORL J Otorhinolaryngol Relat Spec.* 1989;51:8-13. <u>Find it on PubMed</u>

Wei D, Hain TC, Proctor LR. Head shaking nystagmus: associations with canal paresis and hearing loss. *Acta Otolaryngol.* 1989;108:362–7. Find it on PubMed

Instrument name: Cervical Joint Position Error Test									
Primar	y Reviewer: Jennife	Date of review: 12 NOV 2013							
Second	lary Reviewer: Mat								
ICF dor	main (check all that	apply)	:						
x	Body function/struc	icipation							
	uct/s measured (ch								
•	structure and Fun	ction			ctivity		Participation		
<u>x</u> Diz				lance/fa			Community function		
	al Tasks			-	de stairs		Driving		
	scle performance			_	Mobility	/	Health and wellness		
	sory integration			ansfers her:			Home management		
	natosensation atial Orientation			ner:			Leisure/Recreational activities		
:	rtigo						Life satisfaction		
	R/ Gaze stability						Quality of life		
	ner: Vestibular syste	em					Role function		
	e/imbalance						Shopping		
							Social function		
Oth	ner:						Work		
							Other:		
	Link to rehabmea	sures.o	rg summ	ary:					
	Recommendation	Catego	ories						
	Acuity	4	3	2	1	N/A*	Comments		
Acute=	0-6 Weeks			X					
Chroni	c = > 6 Weeks			X					
Overal	l Comments:	Most	studies lo	ook at w	hiplash a	ssociate	d disorders with and without		
		dizzin	ess and w	vith chro	nic neck	pain, h	owever it is reasonable to		
		recon	nmend th	is test a	fter an a	cute nec	k injury (as cleared by the physician	)	
Diagr	ostic Categories	4	3	2	1	N/A*	Comments		
I- Perip	heral Dysfunction					X			
II-Cent	ral Dysfunction					X			
III-BPP	V					X			
IV-Oth	er			X			Measure may be useful in those		
							with cervicogenic dizziness, with		

					neck pain,	, or with postural ity		
*Not applicable: Outcome	e measure not re	l elated to	specifie	d Diagno		,		
Overall Comments:		The ceriback to transve Strong of cervical receptor a role in and post Evidence during of eye and (Bexand ocular recervical reproductive cervical reproductive clinic the cerimay be the imp	vical JPE center a rse and seconnectic dorsal roles (such a eye-har seconnectic der 2012) genic diz genic	T assessifier may agittal pons have coots and as proportional coordination usche actional practice at target min diar ded into conly util actromage T can be ents or the ess or unethod is ng. (Kristinas limits add to rvicocept	es one's abilition about the vestibution of activity and increase tivity exists in the possibution of activity and increase tivity exists in the possibution of activity exists in the possibution of activity exists in the possibution of activity exists in the possibution of a lase at that is ablumeter with containing assessed or assessed or assessed or assessed or another transfer and the possibution of a lattery of a battery of a lattery and a lattery of a lattery and a lattery a	ity to relocate the head maximal rotation in the constrated between the lar nuclei with the neck and joint receptors) playing ception of balance, it al 2000). If between neck muscles and interaction between an people with WAD are mechanism for the cervicoty et definitive. For beam fixed to a helmet are to be mobile. Common concentric circles in 1 cm as intersecting at the zero. Eachnical devices such as 3 assound. In return from all active regets; this test may with the task. A leing developed for use in a Treleaven, 2009). In metric utility, however, tests in order to identify thesia in patients.		
Entry-Level Criteria	should	Students Students should be should learn to administer tool  Students should be exposed to tool (e.g. to read literature)						
Should this tool be required for entry level curricula?	YES	NO X	YES		NO X			

Research Use	YES	NO	Comments
Is this tool appropriate	Х		Revel et al, 1994
for use in intervention			demonstrated
research studies?			improvement in JPET
			after a cervical
			proprioceptive program
			in patients with neck
			pain.
Is there a need for	Х		Limited studies in those
additional research on			with dizziness, no
this measure? If so,			studies to date testing
where are the gaps?			those with vestibular
			loss.
			Many studies lack
			consistency in
			instrumentation and
			methods.
Alternate outcome measur	es for consideration	Link	
to assess like constructs			
1. Seated Cervical Rotation	Test (SCRT)		
2.			
3.			
Additional information on the	his measure can be fo	und at www.rehabmeasu	res.org (insert specific link to
measure).	Treasure can be to	and at www.iciiabiiicasu	moore specific link to
measurej.			

Bexander CS, Hodges PW. Cervico-ocular coordination during neck rotation is distorted in people with whiplash-associated disorders. Exp Brain Res. 2012 Mar;217(1):67-77.

Heikkila H, Astrom P-G. Cervicocephalic kinesthetic sensibility in patients with whiplash injury. *Scan J Rehab Med.* 1996;28:133-138.

Heikkila HV, Wenngren B-I. Cervicocephalic kinesthetic sensibility, active range of cervical motion, and oculomotor function in patients with whiplash injury. *Arch Phys Med Rehabil*. 1998;79:1089-94.

Kristjansson E, Dall'alba P, Jull G. Cervicocephalic kinaesthesia: reliability of a new test approach. *Physiotherapy Research International*. 2001;6(4):224-235.

Kristjansson E, Treleaven J. Dizziness in neck pain: implications for assessment and management. *J Orthop Sports Phys Ther*. 2009;39(5):364-377.

Lee HY, Ten CC, Chai HM, Wang SF. Test-retest reliability of Cervicocephalic kinesthetic sensibility in three cardinal planes. *Manual Therapy*. 2006;11:61-68.

Loudon JK, Ruhl M, Field E. Ability to reproduce head position after whiplash injury. *Spine*. 1997;22:865-868.

Revel M, Minguet M, Gergoy P, Vaillant J, Manual JL. Cervicocephalic kinesthetic sensibility in patients with cervical pain. *Arch Phys Med Rehabil*. 1991;72:288-91.

Revel M, Andre-Deshays C, Minguet M. Changes in cervicocephalic kinesthetia after a proprioceptive rehabilitation program in patients with neck pain: a randomized controlled study. *Arch Phys Med Rehabil*. 1994;75:895-99.

Sterling M, Jull G, Vicenzino B, Kenardy K, Darnell R. Development of motor system dysfunction following whiplash injury. *Pain.* 2003;103:65-73.

Strimpakos N, Sakellari V, Gioftsos G, Kapreli E, Oldham J. Cervical joint position sense: an intra- and inter-examiner reliability study. *Gait and Posture*. 2006;12:22-31.

Treleaven J, Jull G, Sterling M. Dizziness and unsteadiness following whiplash injury: characteristic features and relationship with cervical joint position error. *J Rehabil Med.* 2003;35:36-43.

Tseng CC, Chai H, Lai DM, Wang SF. Cervicocephalic kinesthetic sensibility in young and middle-aged adults with or without a history of mild neck pain. *Manual Therapy*. 2007;12:22-28.

Wrisley DM, Sparto PJ, Whitney SL, Furman JM. Cervicogenic Dizziness: A Review of Diagnosis and Treatment. Journal of Orthopaedic & Sports Physical Therapy. 2000; 30(12):755-766

Instrument name: Motion Sensitivity Test/Quotient									
Reviewer: Jen NCS	Reviewer: Jennifer Fay, PT, DPT, NCS and Tracy Rice, PT, MPH, NCS								Date of review: May 14, 2013
ICF domain (ch	ICF domain (check all that apply):								
x Body function/structurex Activity Participation								cipation	
Construct/s m			hat appl	y):					
Body structi	ure and Fun	ction				ctivity			Participation
_x_DizzinessDual TasksMuscle perSensory int _x_Somatosen _x_Spatial Orie _x_VertigoVOR/ GazeOther: Mer _x_Other: Auto	egration esation entation e stability ntal health	ptoms	Balance/fallsGait (include stairs)x_ High Level Mobilityx_ Transfersx_Other: bed mobility				ility		Community functionDrivingHealth and wellnessHome managementLeisure/Recreational activitiesLife satisfactionQuality of lifeRole functionShoppingSocial functionWorkOther:
Link to	rehabmea	sures.or	g summ	ary:					
Recon	nmendation	Catego	ies						
Acuit	у	4	3		2		1	Co	omments
Acute= 0-6 We	eks				X				
Chronic = > 6 V	Veeks				X				
Overall Comm	ents:	routine		ents					motion provoked dizziness during iving. Measure has excellent
Diagnostic Ca		4	3	2		1	N/A*	C	Comments
I- Peripheral D	ysfunction			X					
II-Central Dysf	unction			X					
III-BPPV			x						
IV-Other x									
*Not applicabl	e: Outcome	e measur	e not re	lated	d to	Diagn	ostic Cate	gor	ies
*Not applicable: Outcome measure not related to Diagnostic Categories  Overall Comments:									

Entry-Level Criteria	learn to	Students should learn to administer tool		should be o tool (e.g. erature)	Comments
Should this tool be required for entry level curricula?	YES	NO x	YES x	NO	Students should be exposed to this tool once they have a firm background knowledge of vestibular dysfunction.
Research Use	YES		NO		Comments
Is this tool appropriate for use in intervention research studies?  Is there a need for additional research on	x				There should be more research validating this
this measure? If so, where are the gaps?					measure with specific populations (i.e central vestibular dysfunction). The authors do not specify what the origin of the subjects' motion provoked dizziness.
Alternate outcome measures	for consider	ation to	Link		
assess like constructs					
1.	1.				
2.	2.				
3.	3.				
Additional information on this measure).	measure car	n be found	at <u>www.re</u> ł	nabmeasures	org (insert specific link to

Akin F, Davenport MJ. Validity and reliability of the Motion Sensitivity Test. *Journal of Rehabilitation Research and Development* 2003; 40: 415-422.

Smith-Wheelock M, Shephard NT, Telian SA. Physical therapy program for vestibular rehabilitation. Am J Otology 1991;12:218-25.

Sharon, J. D., & Hullar, T. E. (2013). Motion sensitivity and caloric responsiveness in vestibular migraine and meniere's disease. *The Laryngoscope*.

Norre, M. E., & Beckers, A. M. (1988). Vestibular habituation training: specificity of adequate exercise. *Archives of Otolaryngology—Head & Neck Surgery*, 114(8), 883.

Instrun	Instrument name: Seated Cervical Rotation Test								
Review	ver: Jennifer L. Stos	kus, PT, I	MSPT, [	OPT					Date of review: 12 NOV 2013
Matthe	ew R. Scherer PT, P	hD, NCS							
ICF dor	main (check all that	apply):							
x l	Body function/struc	ture		Acti	vity	_	Pa	rtici	ipation
	uct/s measured (ch		nat app	ly):					
	structure and Fund	ction				ctivity			Participation
Mu Sen _x_Son Spa Ve VO	al Tasks scle performance asory integration matosensation atial Orientation rtigo OR/ Gaze stability		Balance/fallsBalance/fallsGait (include stairs) High Level Mobility TransfersOther:			-		Community functionDrivingHealth and wellnessHome managementLeisure/Recreational activitiesLife satisfactionQuality of lifeRole functionShoppingSocial functionWorkOther:	
	Link to rehabmeas	sures.org	summ	ary:					
	Recommendation	Categor	ies						
	Acuity	4	3		2		1	С	comments
Acute=	0-6 Weeks						х	Ir	n persons with Whiplash Associated
								D	Dizziness (WAD)
Chronic	c = > 6 Weeks						х		
Overall	l Comments:							1	
Diagn	ostic Categories	4	3	2		1	N/A*		Comments
I- Perip	heral Dysfunction						x		
II-Cent	ral Dysfunction						х		
III-BPP\	V						х		
IV-Othe	er					х			This test has only been studied in
									those with cervical
									trauma/whiplash associated

				disorders				
*Not applicable: Outcome i	neasure not r	elated to Di	agnostic Cat	egories				
Overall Comments:	•	literature leaving the examiner without specific guidance on how the test ought to be administered.  This assessment lacks an objective outcome with which to determine if the test is "positive" or "negative" relying only on an ill-defined report of patient symptoms (i.e., vertigo) to document test findings.  Test interpretation is further confounded by the possibility that a symptomatic patient may elicit symptoms during the first phase of the assessment (Part 1) with vigorous head shaking making it difficult to distinguish between vestibular dizziness and dizziness of a cervicogenic etiology.  Though no psychometrics are available due to the absence of a gold standard with which to confirm a diagnosis of cervicogenic dizziness, this procedure will yield poor specificity for reasons stated above limiting its utility as a diagnostic test.						
Entry-Level Criteria	learn t	nts should to ister tool	Students s exposed to to read lite	tool (e.g.	Comments			
Should this tool be required for entry level	YES	NO	YES	NO				
curricula?		X		X				
Research Use	YES		NO		Comments			
Is this tool appropriate for use in intervention research studies?			x		Limited research on this test. <sup>1,</sup>			
Is there a need for additional research on this measure? If so, where are the gaps?		x Limited research on this test. 1,						
Alternate outcome measure assess like constructs	es for conside	ration to	Link					

1. JPET	Link TBD
2.	
3.	
Additional information on this measure can be found measure).	at <u>www.rehabmeasures.org</u> (insert specific link to

1. Fitz-Ritson D. Assessment of Cervicogenic Vertigo. *J Manipulative Physiol Ther.* 1991;14(3)193-198.

Instrument name: Subjective Visual Vertical Test (Bucket Test)									
Reviewer: Jennifer L. Stos	kus, PT, I	MSPT, DPT			Date of review: 12 NOV 2013				
Matthew R Scherer PT, Ph									
ICF domain (check all that	t apply):								
x Body function/stru	ucture	Ac	ctivity	Pa	rticipation				
Construct/s measured (ch	eck all th	nat apply):							
Body structure and Fun	ction		Activity	<i>!</i>	Participation				
DizzinessDual TasksMuscle performanceSensory integrationSomatosensation _x_Spatial OrientationVertigoVOR/ Gaze stabilityOther:Other:		Gait (ir		=	Community functionDrivingHealth and wellnessHome managementLeisure/Recreational activitiesLife satisfactionQuality of lifeRole functionShoppingSocial functionWorkOther:				
Link to rehabmea	sures.org	summary:	<u> </u>						
Recommendation	Categori	ies							
Acuity	4	3	2	1	Comments				
Acute= 0-6 Weeks			х		SVV likely to be most sensitive to				
					peripheral dysfunction in acute				
					phase.				
Chronic = > 6 Weeks				x	SVV deficits typically improve in				
					persons with <i>peripheral dysfunction</i>				
					within 2-6 weeks making SVV a poor				
					diagnostic test choice in this patient				
	gro								
					Severe central deficits may persist weeks post insult however perception of verticality does				
					improve significantly within 2-4				

						a weaker a	most patients making SVV ssessment choice for th chronic symptoms
						(Dietrich ar	nd Brandt 1993)
Overall Comments:	A pers	on's subj	ective v	isual ve	rtical is n	nost pronou	nced or abnormal when
	tested	in the ac	cute pha	ise of di	agnosis (	Kim et al 20	08)
Diagnostic Categories	4	3	2	1	N/A*	Comment	ts
I- Peripheral Dysfunction			X			Diagnosti	cally most useful < 10
						days post	
II-Central Dysfunction			X			Good evid	dence for use in patients
							nstem infarctions, (i.e.,
						Wallenbe	rg syndrome)
III-BPPV			x			Research	is not conclusive. If SVV
						is abnorm	nal, it will be toward the
						side of ca	nalithiasis, may reverse
						in some p	atients immediately
						following	a repositioning
						maneuve	r, and may resolve within
						one week	after resolution of
						symptom	s.
IV-Other				×		Cervicoge	enic headache/dizziness,
						single stu	dy- no reproducible
						evidence for diagnostic utility	
*Not applicable: Outcome	e measu	re not re	lated to	Diagno	stic Cate	gories	
Overall Comments:		Most a	bnorma	lities in	SVV are	seen in thos	e with acute central
		lesions	and dra	ımatic v	estibular	tone imbala	ance.
		Studen	ts shou	ld Stu	dents sh	ould be	Comments
Entry-Level Criteria		learn t			osed to	tool (e.g.	
		admini	ster too	ol to r	ead liter	rature)	
Should this tool be		YES	NO	YES		NO	
required for entry level							
curricula?			х			Х	
Decears Han		VEC		NO			Comments
Research Use		YES		NO			Comments
Is this tool appropriate					Х		SVV may be useful for
for use in intervention							characterizing spatial
research studies?							orientation deficits
							however it lacks Sn for

			diagnostic purposes
			(Cohen et al 2012)
Is there a need for additional research on this measure? If so,	х		Zwergal, et al (2009) tested the reliability of using the bucket
where are the gaps?			method. This is a quick and reliable test that can be performed in the clinic. More clinical research on this test would be beneficial to clinicians working in acute care or ER settings.
Alternate outcome measu	res for consideration	to Link	
assess like constructs			
1.			
2.			
3.			
Additional information on measure).	this measure can be fo	ound at <u>www.rehabmea</u>	asures.org (insert specific link to

Bohmer A, Rickenmann J. The subjective visual vertical as a clinical parameter of vestibular function in peripheral vestibular diseases. Journal of vestibular research. 1994;5(1):35-45.

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Gomez Garcia A, Jaurgui-Renaud K. Subjective assessment of visual verticality in follow-up of patients with acute vestibular disease. ENT J. 2003; 442-446.

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Zwergal A, et al. A bucket of static vestibular function. Neurology. 2009;72:1689-1692.

Instrument name: The University of California Los Angeles Dizziness Questionnaire (UCLA-DQ)											
Review	er: Tracy Rice, PT,	MPH, NO	CS; Jenn	ifer	Fay,	PT, D	PT, NCS		Date of review: 5-17-13		
ICF dom	nain (check all that	apply):									
x_	Body function/stru	ucture	x_	/	Activ	/ity	X	Par	rticipation		
Constru	ict/s measured (ch	eck all t	hat app	ly):							
Body	structure and Fun	ction			Α	ctivity			Participation		
Mus Sens Som Spa Ver VOI	I Tasks scle performance sory integration natosensation itial Orientation itigo R/ Gaze stability her: Fear		Balance/falls Gait (include stairs) High Level Mobility Transfers X_Other: ADL's						Community functionDrivingHealth and wellnessHome managementLeisure/Recreational activities _X_Life satisfaction _X_Quality of lifeRole functionShoppingSocial functionWorkOther:		
	Link to rehabmea	sures.or	g summ	ary:	link	to or	iginal arti	cle d	containing measure		
	Recommendation	Catego	ies								
<u> </u>	Acuity	4	3		2		1	Co	Comments		
Acute=	0-6 Weeks				X						
Chronic	: = > 6 Weeks				Х						
Overall	Comments:										
Diagno	ostic Categories	4	3	2		1	N/A*	(	Comments		
I- Periph	neral Dysfunction			X							
II-Centra	al Dysfunction			X							
III-BPPV	1		X								
IV-Othe	r			Х							
*Not ap	plicable: Outcome	e measur	e not re	elate	d to	Diagr	ostic Cate	egor	ries		
Overall	Comments:		dizzine	ss an	d its	impac	t on freque	ency	o gain insight into the contributions of , severity, fear, activities of daily living ojective questionnaire is quickly		

		administered making it a good tool for obtaining information on the patient's perception of dizziness and its impacts.  The tool is difficult to obtain and currently is accessed through the original article of reference.  While the tool is free, there is limited psychometric information including test-retest reliability and normative data.  Students should Students should be learn to exposed to tool (e.g.									
Entry-Level Criteria		learn to	ster tool	exposed to to read lite	· -						
Should this tool be		YES	NO	YES	NO						
required for entry level curricula?			X	Х							
Research Use		YES		NO		Comments					
Is this tool appropriate for use in intervention research studies?		X									
Is there a need for additional research on this measure? If so, where are the gaps?		Х				Additional research required to establish cut-off scores and normative data					
Alternate outcome measu assess like constructs	res for (	considera	ation to	Link							
1.Vestibular Handicap Que	stionna	ire (VHQ)		Yardley, L., & Putman, J. (1992). Quantitative analysis of factors contributing to handicap and distress in vertiginous patients: a questionnaire study. <i>Clinical Otolaryngology &amp; Allied Sciences</i> , <i>17</i> (3), 231-236							
2.VRBQ				http://www	.isvr.soton.ac.	uk/audiology/vrbq.htm					
3.DHI			Jacobson, G. P. and Newman, C. W. (1990). "The development of the Dizziness Handicap Inventory." Archives of Otolaryngology - Head and Neck Surgery 116(4): 424-427.								
Additional information on measure).	this mea	asure can	be found	at <u>www.reh</u>	abmeasures.	org (insert specific link to					

Bamiou, D. E., Davies, R. A., McKee, M., & Luxon, L. M. (1999). The effect of severity of unilateral vestibular dysfunction on symptoms, disabilities  $\alpha v \delta$  handicap in vertiginous patients. *Clinical Otolaryngology & Allied Sciences*, 24(1), 31-38.

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Honrubia, V., Bell, T. S., Harris, M. R., Baloh, R. W., & Fisher, L. M. (1996). Quantitative evaluation of dizziness characteristics and impact on quality of life. *Otology & Neurotology*, *17*(4), 595-602.

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		_	-					ed Visual Blurring VAS oVAS,				
Perceiv	ved Dysequilibrium	VAS dVAS	S, Visua	l Analog	Scale v	/ertigo/di	izzin	ess)				
Review	ver: Jennifer Fay, P	T, DPT, N	ICS and	Tracy R	ice, PT	, MPH,		Date of review: April 17, 2012				
NCS												
ICF dor	main (check all that	t apply):					ı					
x	x Body function/structurex Activity Participation											
Construct/s measured (check all that apply):												
	structure and Fun	ction						Participation				
Mu Ser _x_Son _x_Ver VO _x_Oth	al Tasks scle performance nsory integration natosensation atial Orientation	ptoms	_x_Balance/falls _x_Gait (include stairs) High Level Mobility TransfersOther:					Community functionDrivingHealth and wellnessHome managementLeisure/Recreational activitiesLife satisfactionQuality of lifeRole functionShoppingSocial functionWorkOther:				
	Link to rehabmea			ary:								
	Recommendation											
	Acuity	4	3	2		1	Co	mments				
Acute=	0-6 Weeks			Х								
Chronic	c = > 6 Weeks			х								
Overal	Overall Comments:  Measure has been tested in patients with vestibular diagnosis although do not specify level of acuity or type of vestibular dysfunction. Measure has been validated							<u> </u>				
Diagr	ostic Categories	4 3 2 1 N/A* Comments										
	heral Dysfunction			х								
II-Cent	ral Dysfunction							as not been validated for central ysfunction.				
III-BPP	V			х				•				
IV-Oth				х								

Overall Comments:					
	Stude	nts should	Student	ts should be	Comments
Entry-Level Criteria	learn t	:0	exposed	d to tool (e.g.	
	admin	administer tool		literature)	
Should this tool be	YES	NO	YES	NO	Students should be
required for entry level					exposed to this tool
curricula?	х		Х		once they have a firm
					background knowledge
					of vestibular
					dysfunction.
Research Use	YES		NO		Comments
Is this tool appropriate	х				
for use in intervention					
research studies?					
Is there a need for	х				There need to be more
additional research on					research studies
this measure? If so,					validating the measure
where are the gaps?					against other measures
					of symptom severity.
					There is only reliability
					data that has been
					published.
Alternate outcome measures	for conside	ration to	Link		
assess like constructs					
1.					
2.					
3.					
Additional information on this	measure ca	n he found	at www.i	rehahmeasures	org (insert specific link to

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Instrument name: The Vestibular Handicap Questionnaire (VHQ)											
Review	er: Tracy Rice, PT,	MPH, NO	CS; Jenn	ifer	Fay,	PT, DI	PT, NCS		Date of review: 5-17-13		
ICF don	nain (check all that	apply):									
X_	Body function/stru	ıcture	x_	^	Activ	/ity	x	Par	rticipation		
Constru	ict/s measured (ch	eck all th	nat app	ly):							
	structure and Fun	ction				ctivity			Participation		
Dua Nus Sens Som Spa X_Ver	R/ Gaze stability er: Fear		Balance/fallsGait (include stairs) High Level Mobility Transfers _X_Other: ADL's						Community functionDrivingHealth and wellnessHome management _X_Leisure/Recreational activities _X_Life satisfaction _X_Quality of lifeRole functionShopping _X_Social functionWorkOther:		
	Link to rehabmea	sures.or	g summ	ary:	link	to ori	ginal artic	le d	containing measure		
	Recommendation	Categor									
	Acuity	4	3		2		1	Co	omments		
Acute=	0-6 Weeks				X						
Chronic	= > 6 Weeks				X						
	Comments:										
×	ostic Categories	4	3	2		1	N/A*	C	Comments		
I- Periph	neral Dysfunction			X							
II-Centra	al Dysfunction			X							
III-BPPV	'			Х							
IV-Othe	r			Х							
*Not ap	plicable: Outcome	measur	e not re	late	d to	Diagn	ostic Cate	gor	ies		
Overall	Comments:		contrib	utio	ns c	of verti	go and its	im	s to gain insight into the pact on severity, fear, restriction erall quality of life. The self report		

		subjective questionnaire is quickly administered making it a good tool for obtaining information on the patient's perception of vertigo and its impacts.  The tool is difficult to obtain and currently is accessed through the original article of reference.  The author of the tool recommends its use for assessment of patient-perceived handicap and benefits following therapeutic interventions. Has been stated that the VHQ is a clinically relevant questionnaire ofr assessing the impact of vertigo on quality of life, however, the psychometric properties need to be confirmed with larger sample sizes (Duracinsky et al., 2007).  Students should Students should be Comments									
Entry-Level Criteria		learn to		Students si exposed to to read lite	tool (e.g.	Comments					
Should this tool be required for entry level		YES	NO	YES	NO						
curricula?			Х	Х							
Research Use		YES		NO		Comments					
Is this tool appropriate for use in intervention research studies?		Х									
Is there a need for additional research on this measure? If so, where are the gaps?		Х				Additional research required to establish cut-off scores and normative data					
Alternate outcome measu assess like constructs	ires for	considera	ation to	Link							
The University of Operation     Dizziness Question	_	Honrubia, V., Bell, T. S., Harris, M. R., Baloh, R. W., & Fisher, L. M. (1996). Quantitative evaluation of dizziness characteristics and impact on quality of life. <i>Otology &amp; Neurotology</i> , <i>17</i> (4), 595-602									
2. German Version				Tschan, R., Wiltink, J., Best, C., Beutel, M., Dieterich, M., & Eckhardt-Henn, A. (2010). Validation of the German version of the Vertigo							

measure).

	Handicap Questionnaire (VHQ) in patients with vestibular vertigo syndromes or somatoform vertigo and dizziness. <i>Psychotherapie, Psychosomatik, medizinische Psychologie, 60</i> (09/10), e1-e12.
3. DHI	Jacobson, G. P. and Newman, C. W. (1990). "The development of the Dizziness Handicap Inventory." Archives of Otolaryngology - Head and Neck Surgery 116(4): 424-427.
VRBQ  Additional information on this measure can be found	http://www.isvr.soton.ac.uk/audiology/vrbq.htm

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Best, C., Tschan, R., Eckhardt-Henn, A., & Dieterich, M. (2009). Who is at risk for ongoing dizziness and psychological strain after a vestibular disorder?. *Neuroscience*, *164*(4), 1579-1587.

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Hillier, S. L., & McDonnell, M. (2011). Vestibular rehabilitation for unilateral peripheral vestibular dysfunction. *Cochrane Database Syst Rev*, *2*.

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Morris, A.E., Lutman, M.E., & Yardley, L. (2008). Measuring outcome from vestibular rehabilitation, part 1: qualitative development of a new self-report measure. *International Journal of Audiology, 47,* 169-177.

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Yardley, L., Verschuur, C., Masson, E., Luxon, L., & Haacke, N. (1992). Somatic and psychological factors contributing to handicap in people with vertigo. *British journal of audiology*, *26*(5), 283-290.

Instrument name: Vestibular Rehabilitation Questionnaire (VRBQ)											
Review	ver: Tracy Rice, PT,	MPH, NO	CS; Jenn	ifer	Fay,	PT, D	PT, NCS		Date of review: 2-17-13		
ICF do	main (check all that	t apply):									
x_	_ Body function/stru	ucture	x_	A	Activ	vity	X	Pa	rticipation		
Constr	uct/s measured (ch	eck all t	hat app	ly):							
Body	structure and Fun	ction			Α	ctivity	1		Participation		
Mu Ser Sor Sp Ve VO X_Oth	al Tasks scle performance asory integration matosensation atial Orientation	ity	_X_Balance/fallsGait (include stairs) High Level Mobility Transfers _X_Other: ADL's						_X_Community function _X_DrivingHealth and wellnessHome managementLeisure/Recreational activities _X_Life satisfaction _X_Quality of lifeRole functionShopping _X_Social functionWorkOther:		
	Link to rehabmea	sures.or	g summ	ary:	yes						
	Recommendation	Catego	ies								
	Acuity	4	3		2		1	Co	omments		
Acute=	0-6 Weeks				X						
Chroni	c = > 6 Weeks				X						
	l Comments:										
Diagr	nostic Categories	4	3	2		1	N/A*	(	Comments		
I- Perip	heral Dysfunction			X							
II-Cent	ral Dysfunction			X							
III-BPP	V		X								
IV-Oth	er			X							
*Not a	pplicable: Outcome	e measur	e not re	elate	d to	Diagr	ostic Cat	egoi	ries		
Overal	l Comments:		rehabi	litati	on.	Reco	mmended	l for	adult undergoing vestibular use by clinicians to gain insight and its impact different aspects of		

		the rehabilitation process. It is a multidimensional measure of symptoms related to dizziness and the disabilities and handicaps associated with dizziness. It is a valid, reliable and responsive tool for guiding clinicians in the management and assessing outcome in those individuals undergoing vestibular rehabilitation.  The tool was validated against the DHI, VSS-sf, and the SF-36  The tool is responsive to change.								
Entry-Level Criteria		learn to	s should ster tool	Students s exposed to to read lite	tool (e.g.	Comments				
Should this tool be		YES	NO	YES	NO					
required for entry level curricula?			X	X						
curricula:										
Research Use		YES		NO		Comments				
Is this tool appropriate for use in intervention research studies?		Х								
Is there a need for additional research on this measure? If so, where are the gaps?		Х				Additional research required to establish cut-off scores and normative data				
Alternate outcome measu assess like constructs	ures for (	considera	ation to	Link						
1.VHQ			Yardley, L., & Putman, J. (1992). Quantitative analysis of factors contributing to handicap and distress in vertiginous patients: a questionnaire study. <i>Clinical Otolaryngology &amp; Allied Sciences</i> , 17(3), 231-236.							
2.DHI										
3.VSS; VSS-sf										
4.SF-36										

Additional information on this measure can be found at <a href="www.rehabmeasures.org">www.rehabmeasures.org</a> (insert specific link to measure).

#### References

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- Cohen, H. S. (2011). Assessment of functional outcomes in patients with vestibular disorders after rehabilitation. *NeuroRehabilitation 29(2)*, 173-178.
- Meldrum, D., Herdman, S., Moloney, R., Murray, D., Duffy, D., Malone, K., McConn-Walsh, R. (2012).

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- Morris, A. E., Lutman, M. E., Yardley, L. (2009). Measuring outcome from vestibular rehabilitation, part II: refinement and validation of a new self-report measure. *Int J Audiol 48(1)*, 24-37.

Instrument name: SOT – secondary review										
Reviewer: Diane Wrisley,	PhD, PT,	NCS, Eliza	beth [	Danne	nbaum	MscPT	Date of review: 6/18/13			
ICF domain (check all that	apply):									
X Body function/stru	ucture	_x	Activit	У		Participatio	n			
Construct/s measured (ch	eck all th	at apply):					2.6 (mg) yru 30 (mg) mbab arang may may mga 10.00 (mg) mga 20 (mg)			
Body structure and Fun	ction		Acti	vity	And the second s	200 CO	Participation			
Dizziness		_XBalan	-				mmunity function			
Dual Tasks										
_XMuscle performance	1	High L		1obilit	Σ <b>y</b>		ealth and wellness			
_XSensory integration		Trans	fers			·	me management			
_XSomatosensation		Other:					isure/Recreational			
Spatial Orientation						activit				
Vertigo	Life satisfaction									
VOR/ Gaze stability	Quality of life									
Other:							le function			
V Other Vestibuleanin			•			l	opping			
<u>X</u> Other: Vestibulospina Reflex	d						cial_function			
Reflex							ork ham			
						— <sup>Ot</sup>	her:			
Link to rehabmea	sures.org	summary:		,						
Recommendation	reprint respectation and the State Color	V	AND STATE OF THE S	0.53						
Aculty	4	3	2		1	Comment	Comments			
Acute= 0-6 Weeks	X 20 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Commerce of the state of the st	X	voztanich fed			A CONTROL OF THE PROPERTY OF T			
			*****							
Chronic = > 6 Weeks			X.							
Overall Comments:	Minimal	l research c	on psyc	chom	etrics of	the test, mo	ore performed in healthy			
	controls	, only 1 stu	idy wit	:h pec	ple with	vestibular	dysfunction. Reliability not			
	establish	ned in peop	ole wit	h ves	tibular d	vsfunction.	Cost may be prohibitive			
		y clinicians				•	. '			
		,				•				
Diagnostic Categories	4	3 2	200 200 200 200 200 200 200 200 200 200	100 PM (100 PM	N/A*	Commer	ts			
I- Peripheral Dysfunction	Charles of the Control of the Contro	X	09000000	1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2	annung ander 1992 - Colonia Barria Carria Tarria Tarria Sala 1992 - Andrea Sala Andrea Sala Andrea Sala Sala Sala Sala Sala Sala Sala Sa	THE A THE PARTY OF			
II-Central Dysfunction		X				-				
III-BPPV		X								
IV-Other		X Otolith dysfunction								
*Not applicable: Outcome	e measure	6,20	d to D	iagno	stic Cate					
Overall Comments:						tibular neur	itis			
	l	,		- 1						

Entry-Level Criteria  Should this tool be required for entry level curricula?		Students should learn to administer tool		Students should be exposed to tool (e.g. to read literature)		Comments
		YES	NO	YES X	No	
Research Use	The second secon	YES continued by the second of		NO		Comments
Is this tool appropriate for use in intervention research studies?		X				More information is needed on psychometrics in patier populations. Reliability is only moderate.
Is there a need for additional research on this measure? If so, where are the gaps?	· _ · _ · .	X				Reliability and validity in persons with vestibular dysfunction
Alternate outcome measu assess like constructs	res for (	onside	ration to	Link		
Head Shake Sensor	ry Orgar	nization	test	and the animal control of the contro		
2. Clinical Test of Sensory Interaction on Balance						
3.						

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Gill-Body KM, Beninato M, Krebs DE.Phys Ther. 2000 Aug;80(8):748-58.Relationship among balance impairments, functional performance, and disability in people with peripheral vestibular hypofunction.

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Instrument name: Sharpe	ned Ron	berg Test	- sec	ondary	review		,
Reviewer: Diane Wrisley MScPT.	, PhD, PT	, NCS, Eliz	abetl	h Danr	nenbaum		Date of review: 5/22/13
ICF domain (check all tha	t apply):						
X Body function/str	ucture	x	_ Acti	vity		Parti	cipation
Construct/s measured (ch	neck all t	hat apply)					
Body structure and Fun	ction	The state of the state of the state of	Å	ctivity			Participation
Dizziness		_XBala					Community function
Dual Tasks				de stai	•		Driving
_XMuscle performance				Mobil	ity		Health and wellness
_XSensory integration		Tran					Home management
_XSomatosensation		Othe	:				Leisure/Recreational
Spatial Orientation Vertigo							activities Life satisfaction
VOR/ Gaze stability							Quality of life
Other:						-	Role function
PA that has							Shopping
_XOther: Vestibulospin	al						Social function
Reflex						ł	Work
·							Other:
							•
ink to rehabmea	riibaa au			\$ 100 miles   100			
		474744474 (VATE WAR 4 4 4 4 5 4 4 5 4 4 5 4 4 5 4 4 5 4 4 5 4 4 5 4 4 5 4 4 5		2000	200, 412, 200	national date	
Recommendation	11867 (4707) (4707)					1	
Aculty	4	State	2	7741 7777 7799	1	Cor	nments
Acute= 0-6 Weeks			X				
Chronic = > 6 Weeks			Х				
Overall Comments:	Reliabil	ity establis	******	n olde	r females	: Fres	gly and Graybiel found that
		-				_	ection differed significantly in
							age matched controls.
	penon	indrice wife		прагсс	a with he	анту	age matched controls.
Diagnostic Categories	4	3 2	A CONTRACTOR		N/A*	€r	omments
I- Peripheral Dysfunction	0-18(0) 800 000 000 000	X	A Property of the	200 300 100 100			
II-Central Dysfunction		X				-	
III-BPPV		X			_		
IV-Other		X				+	
*Not applicable: Outcome	e meàsur	Paradod	ed to	Diagn	ostic Cate	l egorie	25
Overall Comments:							ral and bilateral vestibular
L				·			

	hypofu	unction			
Entry-Level Criteria	learn t	nts should :o ister tool	exposed	s should be I to tool (e.g. literature)	Comments
Should this tool be required for entry level curricula?	YES x	NO	YES	NO	
Research Use	YES		NO		- Comments
Is this tool appropriate for use in intervention research studies?		e e e e e e e e e e e e e e e e e e e	X	о <del>от (24, фол (11, 11, 12, 14, 14, 14, 14, 14, 14, 14, 14, 14, 14</del>	Although it has been used in multiple studies, there are limited psychometrics to support its use
Is there a need for -additional research on this measure? If so, where are the gaps?	X				Reliability in all populations  Reliability and validity in persons with vestibular dysfunction
Alternate outcome measure assess like constructs	s for conside	ration to	Link and the second of the sec		
1. Berg Balance Scale				Politica (Marie Marie Ma	
2.		-			
3.					
Additional information on th measure).	is measure ca	n be found	at <u>www.</u> r	rehabmeasures	s.org (insert specific link to

Instrument name: Rombe	erg Test								
Reviewer: Diane Wrisley	, PhD, PT	, NCS, E	liza	beth	Danne	enbaum l	VIScPT	Date of review: 30/10/13	
ICF domain (check all tha	t apply):					····			
X Body function/str	ucture	x		Acti	vity		Particip	pation	
Construct/s measured (ch	the state of the s	nat app	ly):	àrta.	1000 1000 1000 1000 1000 1000 1000 100			on problem and the second state of the second s	
Body structure and Fun	ction	Tiping Spanic		V-06-11/1-19-11	ctivity	To a serve in the horizon (F288)	PERCONN CHILD	Participation Pa	
Dizziness		_XB					-	Community function	
Dual Tasks Muscle performance					de stair Mobili	-	-	Driving Health and wellness	
XSensory integration			rans		IVIODIII	Ly		Health and wellness Home management	
_XSomatosensation			her:					Leisure/Recreational	
Spatial Orientation							a	 ctivities	
Vertigo							_	Life satisfaction	
VOR/ Gaze stability Other:								Quality of life	
Other:							-	Role function Shopping	
Other: Vestibulospina	Reflex						_	Snopping Social function	
								Work	
								Other:	
						•		•	
								•	
Link to rehabmea	sures.org	sumn	iárv:	200000000	A STATE OF THE STA				
Recommendation				METER CLASS	Variable 1 2 No. 2	The second secon	Marian Property Company		
Aculty	4	3	uniferration.	2		1	Comments		
Acute= 0-6 Weeks				**************************************	***************************************	X		Silvini de la companya de la company	
Chronic = > 6 Weeks			•			X	·		
Overall Comments:	Reliabil	ity and	Vali	dity	have n	ot been t	ested.	Evidence does not support that	
	people	with ve	stib	ular	dysfun	ction hav	e diffic	culty on the test.	
Providence of the control of the con	2.80.0000000000000000000000000000000000		Calabana.	CV-2015 1 5146 1	processors occurs (inse			Marie Aldreide	
Diagnostic Categories	4	3	2		.1	N/A*	Con	ments	
I- Peripheral Dysfunction			2						
II-Central Dysfunction			2						
III-BPPV									
IV-Other			2			•			
*Not applicable: Outcome	e measur								
Overall Comments:	.	Not te	sted	in re	elation	to diagno	ostic ca	tegories	

Entry-Level Criteria	learn	learn to		s should be I to tool (e.g. literature)	Comments
Should this tool be required for entry level curricula?	YES	NO	YES	NO	
Research Use	YES		NO		Comments
Is this tool appropriate for use in intervention research studies?			X		Although it has been used in multiple studies there are no psychometrics to support its use
Is there a need for additional research on this measure? If so, where are the gaps?	X				Reliability in all populations  Reliability and validity in persons with vestibular dysfunction
Alternate outcome measure	s for conside	ration to	Link		
1. CTSIB, mCTSIB 2. Berg Balance Scale 3.				Company to the company of the compan	
Additional information on thi measure).	s measure ca	an be found	at <u>www.</u>	rehabmeasures	org (insert specific link to

Bohannon RW, Larkin PA, Cook AC, Gear J, Singer J. Decrease in timed balance test scores with aging. Phys Ther. 1984;64:1067-1070

Instrument name: Head S	hake SOT	– secor	ndary	review	1							
Reviewer: Elizabeth Dani	nenbaum	MScPT	, Dia	ne Wris	ley, PhD,	PT, N	NCS	Date of review: 30/10/13				
ICF domain (check all that	t apply):					-		<u>'</u>				
X Body function/stre	ucture	X _	A	ctivity		_ Par	ticipa	ation				
Construct/s measured (ch	**************************************	at appl	ý):					ros coesen y a si a versi inche y a may ca a care crous conse con con a si y a care a care a care a care a care				
Body structure and Fun	ction	5115101 444		Activi				Participation				
Dizziness		_XBa					1-	_Community function				
Dual Tasks				lude st	•		-	_Driving				
_XMuscle performance				vel Mol	oility		-	_Health and wellness				
_XSensory integration _X_Somatosensation		TransfersHome managementLeisure/Recreational										
Spatial Orientation		activities										
Vertigo		Life satisfaction										
VOR/ Gaze stability		Quality of life										
Other:							_	Role function				
								_ _Shopping				
_X_Other: Vestibulospina	al ·				·			_Social function				
Reflex							.	_Work				
								_Other:				
								The second of th				
Link to rehabmea  Recommendation			ai y.					orin dallistikasi oʻr sharilga <sup>n</sup> ( <b>Sup</b> risa) issu norus mattisasi n norus distinut oʻr sa'lasi oʻr sa'lasi				
Acuity	4	3		2	1	····C	omm	ents				
Acute= 0-6 Weeks		A	CHANGE 32	X	Annual designation of the second seco	2000						
Chronic = > 6 Weeks		<u> </u>		X								
Overall Comments:	Minima	l resear	ch or	ı psycho	ometrics (	of the	e test	, more performed in healthy				
	controls	s, only 1	. stud	ly with	people wi	th ve	stibu	lar dysfunction. Cost may be				
	prohibit	ive for i	many	/ clinicia	ans							
Diagnostic Categories	4			1	N/A							
2. (A. A	Section of the sectio		2		N/A	10 10 10 10 10 10 10 10 10 10 10 10 10 1	-villit	nents				
I- Peripheral Dysfunction			X									
II-Central Dysfunction		X										
III-BPPV												
IV-Other			800									
*Not applicable: Outcome								· · · · · · · · · · · · · · · · · · ·				
Overall Comments:		Only te	sted	in peop	ole with ve	estibu	ular n	euritis .				
L	l											

Entry-Level Criteria	Entry-Level Criteria learn to administer tool				Comments	
Should this tool be required for entry level	YES	NO	YES	N <b>o</b>	The test is more for specialty practice	
curricula?  Research Use	YES	X	NO	X	Comments	
Is this tool appropriate for use in intervention research studies?	20 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	recommendation of the control of the	X	A Paragraphy of the Control of the C	More information is needed on psychometrics in patient populations. Reliability is only moderate.	
Is there a need for additional research on this measure? If so, where are the gaps?	X				Reliability and validity in persons with vestibular dysfunction	
Alternate outcome measure	for conside	ration to	Link			
1. Sensory Organization 2. Clinical Test of Sensor Balance		n on				
3.					-	
Additional information on thi measure).	s measure ca	n be found	at <u>www.</u>	rehabmeasures	s.org (insert specific link to	

Honaker JA, Converse CM, Shepard NT., Modified head shake computerized dynamic posturography Am J Audiol. 2009:18(2Dec):108-13.

Lim HW, Kim KM, Jun HJ, Chang J, Jung HH, Chae SW., Correlating the head shake-sensory organizing test with dizziness handicap inventory in compensation after vestibular neuritis., Otol Neurotol. 2012;33(2 Feb):211-4.

Mishra A, Davis S, Speers R, Shepard NT., Head shake computerized dynamic posturography in peripheral vestibular lesions., Am J Audiol. 2009;18(1 Jun):53-9

Pang MY, Lam FM, Wong GH, Au IH, Chow DL., Balance performance in head-shake computerized dynamic posturography: aging effects and test-retest reliability., Phys Ther. 2011 Feb;91(2):246-53. doi: 10.2522/ptj.20100221. Epub 2010 Dec 9

Park MK, Lim HW, Cho JG, Choi CJ, Hwang SJ, Chae SW., Park MK, Lim HW, Cho JG, Choi CJ, Hwang SJ, Chae SW., Otol Neurotol. 2012 Jan;33(1):67-71.

Instrument name: Uniped	lal stance	– seco	ndar	y re	view				
Reviewer: Diane Wrisley	PhD, PT	, NCS, E	lizak	eth	Dann	enbaum I	VIScPT.	Date of review: 30/10/2013	
ICF domain (check all that	apply):								
X Body function/str	ucture	x.	<i>'</i>	Acti	vity		Particip	ation	
Construct/s measured (ch	*******	nat app	ly):						
Body structure and Fun	ction	and the state of t	4 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	*****	ctivity		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Participation	
Dizziness		_XB				,		_Community function	
Dual Tasks		Gait (include stairs)Driving							
_XMuscle performance		High Level Mobility Health and wellness							
_XSensory integration		TransfersHome managementHome managementHome management							
_XSomatosensation Spatial Orientation		0	ner;					teisure/ Recreational tivities	
Vertigo							ac	Life satisfaction	
VOR/ Gaze stability								Quality of life	
Other:							-	Role function	
								Shopping	
XOther:_Vestibulospin	al	·						Social function	
Reflex								Work	
							_	_Other:	
elabel 1 e de montro de la Compagnit agai vera anna debinar e e anna de de la Compagnit agai vera e e e e e e			Mar 444 A 1 2 4 1 1						
Link to rehabmea			ary:						
Recommendation	elarina kelabila ar 100 ela abai								
Acuity	4	3	ALBERTA SE	MARKET CAN	THE COURSE COME	COP LORDING TO LEFT	Comn	ients	
Acute= 0-6 Weeks			•	X					
Chronic = > 6 Weeks				X					
Overall Comments:	Minima	l resea	rch a	n p	sychor	netrics of	the test	t, only 1 study with people	
	with ve	stibular	dys	func	ction.				
·									
Diagnostic Categories	4	8	2	(2011/200		N/A*	Com	ments	
I- Peripheral Dysfunction			X		anager and a second	alentica i i jiha kuwa jiyi ka aan nama angani	A COLUMN TO THE RESIDENCE OF THE PARTY OF TH		
II-Central Dysfunction			X						
III-BPPV									
IV-Other			X						
*Not applicable: Outcom	e measur	e not re	elate	d to	Diagr	ostic Cate	egories		
Overall Comments:		Only te	estec	d in	people	with per	ipheral	vestibular loss	
1		•			- •	•	-		

Entry-Level Criteria	learn	nts should to ilster tool	expose	ts should be d to tool (e.g. literature)	Comments		
Should this tool be required for entry level curricula?	YES	NO.	YES	NO	This test is included in other multi-item tests (i.e. Berg Balance test)		
Research Use	YES	veni vista de la	NO		Comments		
Is this tool appropriate for use in intervention research studies?			X		More information is needed on psychometrics in patient populations. Reliability no tested in people with vestibular dysfunction.		
Is there a need for additional research on this measure? If so, where are the gaps?	X				Reliability and validity in persons with vestibular dysfunction		
Alternate outcome measure assess like constructs	s for conside	ration to	Link				
1.	uner, There is phase a ground of the property of the ST (ST (ST (ST (ST (ST (ST (ST (ST (ST						
2.							
3.							
Additional information on thi measure).	s measure ca	an be found	at <u>www.</u>	rehabmeasures	s.org (insert specific link to		

El-Kashlan HK, Shepard NT, Asher AM, Smith-Wheelock M, Telian SA. Evaluation of clinical measures of equilibrium. Laryngoscope. 1998 Mar;108(3):311-9.

Franchignoni F, Tesio L, Martino MT, Ricupero C. Reliability of four simple, quantitative tests of balance and mobility in healthy elderly females. Aging (Milano). 1998 Feb;10(1):26-31

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Mann GC, Whitney SL, Redfern MS, Borello-France DF, Furman JM. Functional reach and single leg stance in patients with peripheral vestibular disorders. J Vestib Res. 1996 Sep-Oct;6(5):343-53.

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

Instrument name: Timed	Up and (	Go (TL	JG)						
Reviewer: Elizabeth Dan	nenbaun	n MSc	PT, Di	ane	Wrisle	ey, PhD, P	T, NCS	Date of review: 30/10/13	
ICF domain (check all tha	t apply):		,						
Body function/stru	cture	X	_ Activ	vity	_	Part	icipatio	n	
Construct/s measured (cl	neck all t	hat ar	ply):	oce car	And Andrew Color				
Body structure and Fun	ction	TALLERS AND A SECOND		Α	ctivity			Participation	
Dizziness		1	3alanc				_	_Community function	
Dual Tasks		XGait (include stairs)Driving							
Muscle performance			High L		l Mobi	lity		_Health and wellness	
X_Sensory integration Somatosensation			Transf	ers				_Home management	
X Spatial Orientation	-		Other:					_Leisure/Recreational	
X_Spatiar Orientation X_ Vertigo		activities  Life satisfaction							
VOR/ Gaze stability		Quality of life							
Other:								Role function	
								 _Shopping	
Other:		.					_	Social function	
								Work	
·								_Other:	
	is.					٠			
Link to rehabmea	sures,or	g sum	mary:			A CONTROL OF THE PROPERTY OF T			
Recommendation	Catego	ries: 3	: reco	mn	ended	l to use in	combir	nation with other tests	
Aculty	4	3		2		1	Comm	ients	
Acute= 0-6 Weeks		gelijage preme accessy)	weigh ( process of the St. E.	×		- Signing vigo projector hijo heli hijo colono estito de hilled strigit	Not st	udied	
Chronic = > 6 Weeks			-	Х					
Overall Comments:						ř.			
Diagnostic Categories	4	3	2	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		N/A*	Com	ments	
I- Peripheral Dysfunction		X		***************************************					
II-Central Dysfunction		X						-	
III-BPPV			X		<del></del>			i	
IV-Other			X						
*Not applicable: Outcome	measui	re not	relate	d to	Diagr	ostic Cate	gories		
Overall Comments:									

Entry-Level Criteria	learn	nts should to lister tool	expose	ts should be d to tool (e.g. literature)	Comments
Should this tool be	YES	ÑO	YES	NO	
required for entry level	CHARLEST CONTROL OF THE CONTROL OF T	ACCOUNTS ON THE STATE OF THE ST	the state of the s		777 767 767 767
curricula?	X		X		
Research Use	YES	The second secon	NO		Gomments
Is this tool appropriate	X, a hi	gh tech		Complete England Security Complete Comp	McGrath D, Greene BR,
for use in intervention	versio				Doheny EP, McKeown
research studies?	refere	nce in			DJ, De Vito G, Caulfield
	comm	ents			B.,Reliability of
					quantitative TUG
					measures of mobility fo
					use in falls risk
					assessment., Conf Proc
					IEEE Eng Med Biol Soc.
					2011;2011:466-9. doi:
					10.1109/IEMBS.2011.60
					90066.PMID:22254349[
					PubMed - indexed for
					MEDLINE]
Is there a need for	X			· · · · · · · · · · · · · · · · · · ·	-standardizing the gait
additional research on					speed and turning
this measure? If so,					instructions
where are the gaps?					
Alternate outcome measures	for conside	ration to	Unk		
assess like constructs		A CONTROL OF THE CONT	The second secon		
1. Functional Gait Assess	sment				
2. Dynamic Gait Index					
3. Gait speed (6meter, 3	meter)				
Additional information on this measure).	measure ca	n be found	at <u>www.i</u>	rehabmeasures	org (insert specific link to

Instrument name: Activities Specific Balance Confidence Scale											
Reviewer: Jennifer Fay, P	Γ, DPT, N	CS and	Trac	y Ri	ce, PT	, MPH, N	ICS	Date of review: July 8, 2013			
ICF domain (check all that	apply):				•						
Body function/strud	cture	x	_Ac	tivit	у	x	Part	icipation			
Construct/s measured (ch	eck all t	nat appl	y):								
Body structure and Fun	ction	A A C A C A C A C A C A C A C A C A C A		Αc	ctivity			Participation			
Dizziness		x_Ba	land	ce/fa	alls			x_Community function			
Dual Tasks		_xG	•					Driving			
Muscle performance			_		Mobi	lity		Health and wellness			
Sensory integration		x_T		fers				_xHome management			
Somatosensation		Oth	ner:					x_Leisure/Recreational			
Spatial Orientation								activities			
Vertigo								Life satisfaction			
VOR/ Gaze stability								Quality of life			
Other:								x_Role function			
								x_Shopping			
<u>Other:</u>								Social function			
								Work			
								Other:			
Link to rehabmea	sures.or	g summ	ary:								
Recommendation	Catego	ies –									
Acuity"	4	3	The second secon	2		1	C	Comments			
Acute= 0-6 Weeks		X									
Chronic = > 6 Weeks		X				-					
Overall Comments:	Measu	re has go	ood	psyc	chome	etric prop	erti	es for vestibular population, is free			
	to use a	and reas	ona	bly a	access	sible to p	rovid	ders.			
Diagnostic Categories	4	3	2		1	N/A*		Comments			
I- Peripheral Dysfunction		X	07(78791000)								
II-Central Dysfunction		· 🐰									
III-BPPV		X									
IV-Other		×									
*Not applicable: Outcome	e measui		late	d to	Diagr	nostic Ca	tego	ries			
Overall Comments:		Measu	re h	as b	een st	udied in	vari	ety of diagnostic populations other			
		than ve	estib	ular	and h	nas demo	nstr	ated good psychometric			
								nto reliability and responsiveness			

	with t	with the vestibular population is recommended.								
Entry-Level Criteria	learn		exposed	s should be I to tool (e.g. literature)	Comments					
Should this tool be required for entry level	YES	NO	YES	NO						
curricula?	X		X		COLUMN TO THE STATE OF THE STAT					
Research Use	YES TO THE TOTAL PROPERTY OF THE STATE OF TH		NO		Comments					
Is this tool appropriate for use in intervention research studies?	AUDERIO ENTRE PARTE	en e								
Is there a need for additional research on this measure? If so, where are the gaps?	x		<u> </u>		Additional research into reliability and responsiveness with the vestibular population.					
Alternate outcome measure	l s for conside	ration to	Link							
assess like constructs			A State of the section of the sectio							
1.Falls Efficacy Scale (FES)										
2. Turkish Version		Karapolat et al., 2010								
3.										
Additional information on thi measure).	s measure c	an be found	at <u>www.</u>	rehabmeasures	s.org (insert specific link to					

Alghwiri, A. A., Marchetti, G. F., & Whitney, S. L. (2011). Content comparison of self-report measures used in vestibular rehabilitation based on the international classification of functioning, disability and health. *Physical Therapy*, *91*(3), 346-357.

Beninato, M., Portney, L. G., et al. (2009). "Using the International Classification of Functioning, Disability and Health as a framework to examine the association between falls and clinical assessment tools in people with stroke." Physical Therapy 89(8): 816-825. Find it on PubMed

Botner, E. M., Miller, W. C., et al. (2005). "Measurement properties of the Activities-specific Balance Confidence Scale among individuals with stroke." Disability and Rehabilitation 27(4): 156-163. <u>Find it on PubMed</u>

Clendaniel, R. A. (2000). Outcome measures for assessment of treatment of the dizzy and balance disorder patient. *Otolaryngologic Clinics of North America*, 33(3), 519-533.

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. <u>Find</u> it on PubMed

Duracinsky, M., Mosnier, I., Bouccara, D., Sterkers, O., & Chassany, O. (2007). Literature review of questionnaires assessing vertigo and dizziness, and their impact on patients' quality of life. *Value in health*, *10*(4), 273-284.

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. Find it on PubMed

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

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Instrument name: Motion Sensitivity Test/Quotient									
Reviewer: Jennifer Fay, P NCS	T, DPT, I	VCS and	Tracy R	ice, PT,	MPH,	Date of review: May 14, 2013			
ICF domain (check all that	apply):								
x Body function/stru	ıcture	x_	Activ	ity	Pa	rticipation			
Construct/s measured (ch		hat app							
Body structure and Function Activity Participation									
x_Dizziness			lance/fa			Community function			
Dual Tasks			-	de stairs	Driving				
Muscle performance				el Mobili	ty .	Health and wellness			
Sensory integration			ransfers			Home management			
_xSomatosensation		x_o	ther: be	d mobili	ty	Leisure/Recreational			
_x Spatial Orientation						activities			
_x Vertigo						Life satisfaction			
VOR/ Gaze stability						Quality of life  Role function			
Other: Mental health						<del></del>			
x Other: Autonomic						Shopping Social function			
symptoms						Work			
Symptoms						Other:			
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ink torre habmea	sures.or	g summ	ary:						
Recommendation					Service of the servic				
Acuity	4	3	2			Comments			
Acute= 0-6 Weeks			X			жынды жайын жа			
,			Smit						
Chronic = > 6 Weeks			×						
Overall Comments:	Measu	re has b	een test	ed in pa	tients wi	th motion provoked dizziness during			
	routine	moven	nents as:	sociated	with dail	y living. Measure has excellent			
	reliabil	ity data	r						
Diagnostic Categories	4	3	The state of the s		N/A*	Comments			
I- Peripheral Dysfunction			TO A STATE OF THE	79772333037455333					
II-Central Dysfunction			X			Has not been validated for central			
,			20000			dysfunction, however, Individuals			
						with vestibular migraine and			
						meniere's disease scored			
						significantly higher on the MSQ than			
•						controls (p<0.0001) Sharon, J. D., &			
	,					Hullar, T. E. (2013). Motion			

III-BPPV IV-Other *Not applicable: Outcome Overall Comments:	measur	e not re	elated to Di	agnostic (	responsion migraine The Lary	y and caloric veness in vestibular and meniere's disease. ngoscope
Entry-Level Criteria		learn t	nts should :o Ister tool	exposed	s should be I to tool (e.g. literature)	Comments
Should this tool be required for entry level curricula?		YES	X	YES X	NO	Students should be exposed to this tool once they have a firm background knowledge of vestibular dysfunction.
Research Use  Is this tool appropriate for use in intervention research studies?		YES ×		NO		Comments
Is there a need for additional research on this measure? If so, where are the gaps?		X	•			There should be more research validating this measure with specific populations (i.e central vestibular dysfunction). The authors do not specify what the origin of the subjects' motion provoked dizziness.
Alternate outcome measu assess like constructs  1.	es=lol=(	conside	ration to	Link		

3.

Additional information on this measure can be found at <a href="www.rehabmeasures.org">www.rehabmeasures.org</a> (insert specific link to measure).

#### References

Akin F, Davenport MJ. Validity and reliability of the Motion Sensitivity Test. *Journal of Rehabilitation Research and Development* 2003; 40: 415-422.

Smith-Wheelock M, Shephard NT, Telian SA. Physical therapy program for vestibular rehabilitation. Am J Otology 1991;12:218-25.

Sharon, J. D., & Hullar, T. E. (2013). Motion sensitivity and caloric responsiveness in vestibular migraine and meniere's disease. *The Laryngoscope*.

Norre, M. E., & Beckers, A. M. (1988). Vestibular habituation training: specificity of adequate exercise. *Archives of Otolaryngology—Head & Neck Surgery*, 114(8), 883.

Instrument name: Visual A Perceived Dysequilibrium						ived Visual Blurring VAS oVAS, ziness)			
Reviewer: Jennifer Fay, P NCS	Date of review: April 17, 2012								
ICF domain (check all that	apply):		· · · · · ·						
x Body function/structurex Activity Participation									
Construct/s measured (check all that apply):									
Body structure and Fun	ction			ctivity	Although Albert and Al	Participation			
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sensory integration			ansiers ier:			Leisure/Recreational			
Spatial Orientation			ici.			activities			
_x_ Vertigo						Life satisfaction			
VOR/ Gaze stability						Quality of life			
Other: Mental health						Role function			
						Shopping			
_xOther: Autonomic		•				Social function			
symptoms						Work			
						Other:			
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Recommendation	Catego	ies							
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Acute= 0-6 Weeks			ж	Salara and		COLORADO COLORADO COMO COLORADO COMO COLORADO COLORADO COMO COLORADO COLORADO COMO COLORADO COLORADO COLORADO C			
			•						
Chronic = > 6 Weeks			X						
Overall Comments:						th vestibular diagnosis although does			
·	not spe	cify lev	el of acu	ity or ty	pe of vest	tibular dysfunction. Measure has not			
	been v	alidated							
		W. A. W.	Invited in the land		Paris - 1000 1000 1000 1000 1000 1000 1000 1				
Diagnostic Categories	4	3	2	The second secon	N/A*	Comments			
I- Peripheral Dysfunction			X						
II-Central Dysfunction			X			Has not been validated for central			
· ·						dysfunction.			
III-BPPV			X			·			
IV-Other			X						

*Not applicable: Outcome m	easure not re	elated to Di	agnostic (	Categories			
Overall Comments:							
Entry-Level Criteria	learn t	Students should learn to administer tool		ts should be d to tool (e.g. literature)	Comments		
Should this tool be required for entry level curricula?	YES		YES	NO NO	Students should be exposed to this tool once they have a firm background knowledge of vestibular dysfunction.		
Research Use	YES		NO		Comments		
Is this tool appropriate for use in intervention research studies?	X		District and the second of the second o				
Is there a need for additional research on this measure? If so, where are the gaps?	X				There need to be more research studies validating the measure against other measures of symptom severity. There is only reliability data-that-has-been published.		
Alternate outcome measures	l for conside	ration to	Link				
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Additional information on thi measure).	s measure ca	an be found	l at <u>www.</u>	rehabmeasure	s.org (insert specific link to		

Hall, CD. Herdman, SJ. Reliability of Clinical Measures Used to Assess Patients with Peripheral Vestibular Disorders. *J Neurol Phys Ther* 2006;30: 74-81

Herdman SJ, Hall CD, et al. Recovery of Dynamic Visual Acuity in Bilateral Vestibular Hypofunction. *Arch Otolaryngol Head Neck Surg* 2007;133: 383-389.

Toupet M, Ferrary E, Bozorg Grayeli A. Visual analog scale to assess vertigo and dizziness after repositioning maneuvers for benign paroxysmal positional vertigo. *J Vestib Research* 2001;21: 235-241.

Herdman, S. J., Schubert, M. C., Das, V. E., & Tusa, R. J. (2003). Recovery of dynamic visual acuity in unilateral vestibular hypofunction. *Archives of Otolaryngology—Head & Neck Surgery*, 129(8), 819-824.

Instrument name: Visual Vertigo Analogue Scale									
Reviewer: Jennifer Fay, P	Γ, DPT; Tr	acy Ric	ce, P	T, N	/IPH, N	CS		Date of review: May 8, 2013	
ICF domain (check all that	apply):			,			b		
x Body function/stru	cture	x_	A	ctiv	ity	x	Part	ticipation	
Construct/s measured (ch	eck all tha	at appl	y):		Vicinity Area of Area				
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x_Dizziness	-	x_Ba		•				x_Community function	
Dual Tasks					ıde stai			x_Driving	
Muscle performance	-		_		el Mobi	ility		Health and wellness	
Sensory integration	-		ansf	ers				Home management	
_xSomatosensation _x Spatial Orientation	-	Oti	ner:					_xLeisure/Recreational	
_x Spatial Orientation _x Vertigo								Life satisfaction	
VOR/ Gaze stability						-		Quality of life	
x Other: Mental health								Role function	
							-	_x_Shopping	
_xOther: Autonomic			Social function						
symptoms								_xWork	
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Recommendation	Categorie	Š							
Acuity	4	3		2		1	Co	omments	
Acute= 0-6 Weeks				Х		31,000			
Chronic = > 6 Weeks				X					
Overall Comments:	Measure	has b	een	test	ed in p	atients w	ith '	vestibular diagnosis although does	
	not spec	ify leve	el of	acu	ity or t	ype of ve	stib	ular dysfunction. Measure has not	
	been val	idated							
	- MARINET IN THE STATE OF THE S		rvaraueius	18-1171-14-427	F				
Diagnostic Categories	4		2		1	N/A*	C	Comments	
I- Peripheral Dysfunction			Х						
II-Central Dysfunction			х					las not been validated for central	
							d	lysfunction.	
III-BPPV			Х						
IV-Other	x								
*Not applicable: Outcome	measure	not re	late	d to	Diagn	ostic Cate	egor	ies	
Overall Comments:									

Entry-Level Criteria	Students should learn to administer tool				s should be d to tool (e.g. literature)	Comments		
Should this tool be required for entry level curricula?		YES	X	YES	NO.	Students should be exposed to this tool once they have a firm background knowledge of vestibular dysfunction.		
Research Use		YES		NO		Comments		
Is this tool appropriate for use in intervention research studies?		and the property of the second		X		The state of the s		
Is there a need for additional research on this measure? If so, where are the gaps?		X				There need to be more research studies validating the measure against other measures of symptom severity. There is only reliability data that has been published.		
Alternate outcome measure	s for	conside	ration to	Links				
assess like constructs  1. Situational Characteristics	Ques	tionnair	Pavlou M, Davies RA, Bronstein AM. The assessment of increased sensitivity to visual stimuli in patients with chronic dizziness J Vestib Res. 2006; 16(4-5): 223-31.					
2.								
3.								

Dannenbaum E, Chilingaryan G, Fung J. Visual Vertigo Analogue Scale: An assessment questionnaire for visual vertigo. *J of Vestibular Research* 2011: 153-159

Instrument name: Disability Rating Scale										
Reviewer: Jennifer Fay, F	T, DPT a	nd Trac	y Ric	ce, F	T, MP	H, NCS		Date of review: March 29, 2013		
ICF domain (check all tha	t apply):					<del></del>	L			
Body function/stru	Body function/structurex Activityx Participation									
Construct/s measured (ch	neck all t	hat app	ly):				V1.74 000			
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Muscle performance		x_ <u> </u>				oility		x_Health and wellness		
Sensory integration Somatosensation		. — –	rans	rers	i			Home management Leisure/Recreational		
Spatial Orientation			her:					activities		
Vertigo								Life satisfaction		
VOR/ Gaze stability								Quality of life		
Other:								_x_Role function		
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Acute= 0-6 Weeks	100 100 100 100 100 100 100 100 100 100	**************************************		X	ranger (core)					
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Chronic = > 6 Weeks				X						
Overall Comments:	There i	is limite	d psy	/cho	metri	c research	on	this measure.		
Diagnostic Categories	4	3	2		1	N/A*	C	comments		
I- Peripheral Dysfunction			X							
II-Central Dysfunction			X							
III-BPPV			X							
IV-Other		÷				×				
*Not applicable: Outcome	e measu	re not r	elate	d to	Diagr	nostic Cate	gor	ies		
Overall Comments:		There	is lin	nited	d data	on psycho	ome	tric properties for this measure.		

Entry-Level Criteria		learn 1	nts should to ister tool	expose	s should be d to tool (e.g. literature)	Comments
Should this tool be required for entry level curricula?		YES	X	YE5	NO	Students should be exposed to this tool once they have a firm background knowledge of vestibular dysfunction.
Research Use		YES		NO.		Comments
Is this tool appropriate for use in intervention research studies?  Is there a need for additional research on this measure? If so, where are the gaps?		X		X		There need to be more research studies done validating this measure compared to other measures of symptom severity.
Alternate outcome measu	res for	conside	ration to	Link		
assess like constructs  1.		The second secon				
2.						
3.						
Additional information on measure).	this me	asure ca	n be found	at <u>www.</u>	rehabmeasures	s.org (insert specific link to

Shepard, N. T., Telian, S. A., & Smith-Wheelock, M. (1990). Habituation and balance retraining therapy: a retrospective review. *Neurologic Clinics*.

Clendaniel RA. Outcome Measures for Assessment of Treatment of the Dizzy and Balance Disorder Patient, Otolaryngolic Clinics of North America. 2000: 33; 519-33.

Hall CD, Herdman SJ. Reliability of Clinical Measures Used to Assess Patients with Peripheral Vestibular Disorders. 2006: 30;74-81

Shephard NT, Smith-Wheelock M, Telian SA, Raj A. Vestibular and Balance Rehabilitation Therapy. Acta Otol Rhinol Laryngol 1993:02: 198-205.

Instrument name: Motion Sensitivity Test/Quotient									
Reviewer: Jennifer Fay, P NCS	T, DPT, I	VCS and	Tracy R	ice, PT,	MPH,	Date of review: May 14, 2013			
ICF domain (check all that	apply):								
x Body function/stru	ıcture	x_	Activ	ity	Pa	rticipation			
Construct/s measured (ch		hat app							
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x_Dizziness			lance/fa			Community function			
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Sensory integration			ransfers			Home management			
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	reliabil	ity data	r						
Diagnostic Categories	4	3	The state of the s		N/A*	Comments			
I- Peripheral Dysfunction			TO A STATE OF THE	79772333037455333					
II-Central Dysfunction			X			Has not been validated for central			
,			20000			dysfunction, however, Individuals			
						with vestibular migraine and			
						meniere's disease scored			
						significantly higher on the MSQ than			
•						controls (p<0.0001) Sharon, J. D., &			
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III-BPPV IV-Other *Not applicable: Outcome Overall Comments:	measur	e not re	elated to Di	agnostic (	responsion migraine The Lary	y and caloric veness in vestibular and meniere's disease. ngoscope
Entry-Level Criteria		learn t	nts should :o Ister tool	exposed	s should be I to tool (e.g. literature)	Comments
Should this tool be required for entry level curricula?		YES	X	YES X	NO Property of the Control of the Co	Students should be exposed to this tool once they have a firm background knowledge of vestibular dysfunction.
Research Use  Is this tool appropriate for use in intervention research studies?		YES ×		NO		Comments
Is there a need for additional research on this measure? If so, where are the gaps?		X	•			There should be more research validating this measure with specific populations (i.e central vestibular dysfunction). The authors do not specify what the origin of the subjects' motion provoked dizziness.
Alternate outcome measu assess like constructs  1.	es=lol=(	conside	ration to	Link		

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Additional information on this measure can be found at <a href="www.rehabmeasures.org">www.rehabmeasures.org</a> (insert specific link to measure).

#### References

Akin F, Davenport MJ. Validity and reliability of the Motion Sensitivity Test. *Journal of Rehabilitation Research and Development* 2003; 40: 415-422.

Smith-Wheelock M, Shephard NT, Telian SA. Physical therapy program for vestibular rehabilitation. Am J Otology 1991;12:218-25.

Sharon, J. D., & Hullar, T. E. (2013). Motion sensitivity and caloric responsiveness in vestibular migraine and meniere's disease. *The Laryngoscope*.

Norre, M. E., & Beckers, A. M. (1988). Vestibular habituation training: specificity of adequate exercise. *Archives of Otolaryngology—Head & Neck Surgery*, 114(8), 883.

Instrument name: Visual A Perceived Dysequilibrium						ived Visual Blurring VAS oVAS, ziness)			
Reviewer: Jennifer Fay, P NCS	Date of review: April 17, 2012								
ICF domain (check all that	apply):		· · · · · ·						
x Body function/structurex Activity Participation									
Construct/s measured (check all that apply):									
Body structure and Fun	ction			ctivity	Although Albert and Al	Participation			
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Spatial Orientation			ici.			activities			
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VOR/ Gaze stability						Quality of life			
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symptoms						Work			
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Chronic = > 6 Weeks			X						
Overall Comments:						th vestibular diagnosis although does			
·	not spe	cify lev	el of acu	ity or ty	pe of vest	tibular dysfunction. Measure has not			
	been v	alidated							
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Diagnostic Categories	4	3	2	The second secon	N/A*	Comments			
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II-Central Dysfunction			X			Has not been validated for central			
· ·						dysfunction.			
III-BPPV			X			·			
IV-Other			X						

*Not applicable: Outcome m	easure not re	elated to Di	agnostic (	Categories			
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Entry-Level Criteria	learn t	Students should learn to administer tool		ts should be d to tool (e.g. literature)	Comments		
Should this tool be required for entry level curricula?	YES		YES	NO NO	Students should be exposed to this tool once they have a firm background knowledge of vestibular dysfunction.		
Research Use	YES		NO		Comments		
Is this tool appropriate for use in intervention research studies?	X		District and the second of the second o				
Is there a need for additional research on this measure? If so, where are the gaps?	X				There need to be more research studies validating the measure against other measures of symptom severity. There is only reliability data-that-has-been published.		
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Hall, CD. Herdman, SJ. Reliability of Clinical Measures Used to Assess Patients with Peripheral Vestibular Disorders. *J Neurol Phys Ther* 2006;30: 74-81

Herdman SJ, Hall CD, et al. Recovery of Dynamic Visual Acuity in Bilateral Vestibular Hypofunction. *Arch Otolaryngol Head Neck Surg* 2007;133: 383-389.

Toupet M, Ferrary E, Bozorg Grayeli A. Visual analog scale to assess vertigo and dizziness after repositioning maneuvers for benign paroxysmal positional vertigo. *J Vestib Research* 2001;21: 235-241.

Herdman, S. J., Schubert, M. C., Das, V. E., & Tusa, R. J. (2003). Recovery of dynamic visual acuity in unilateral vestibular hypofunction. *Archives of Otolaryngology—Head & Neck Surgery*, 129(8), 819-824.

Instrument name: Visual V	ertigo An	alogue	Sca	le				1		
Reviewer: Jennifer Fay, P	Γ, DPT; Tr	acy Ric	ce, P	T, N	/IPH, N	CS		Date of review: May 8, 2013		
ICF domain (check all that	apply):			,			b			
x Body function/stru	cture	x_	A	ctiv	ity	x	Part	ticipation		
Construct/s measured (ch	eck all tha	at appl	y):		Vicinity Area of Area					
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_x Spatial Orientation _x Vertigo								Life satisfaction		
VOR/ Gaze stability		Quality of life								
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							-	_x_Shopping		
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symptoms								_xWork		
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Link to rehabmeas	ures.org	summ	ary:	The state of the s			A Secretary of the Control of the Co			
Recommendation	Categorie	Š								
Acuity	4	3		2		1	Co	omments		
Acute= 0-6 Weeks				Х		311223				
Chronic = > 6 Weeks				X						
Overall Comments:	Measure	has b	een	test	ed in p	atients w	ith '	vestibular diagnosis although does		
	not spec	ify leve	el of	acu	ity or t	ype of ve	stib	ular dysfunction. Measure has not		
	been val	idated								
	- MARINET IN THE STATE OF THE S		rvaraueius	18-1171-14-427	F					
Diagnostic Categories	4		2		1	N/A*	C	Comments		
I- Peripheral Dysfunction			Х							
II-Central Dysfunction			х					las not been validated for central		
							d	lysfunction.		
III-BPPV		x .								
IV-Other		x								
*Not applicable: Outcome	measure	not re	late	d to	Diagn	ostic Cate	egor	ies		
Overall Comments:										

Entry-Level Criteria		learn t	nts should :o ister tool	expose	s should be d to tool (e.g. literature)	Comments		
Should this tool be required for entry level curricula?		YES	X	YES	NO.	Students should be exposed to this tool once they have a firm background knowledge of vestibular dysfunction.		
Research Use		YES		NO		Comments		
Is this tool appropriate for use in intervention research studies?		and the property of the second		X		The state of the s		
Is there a need for additional research on this measure? If so, where are the gaps?		X				There need to be more research studies validating the measure against other measures of symptom severity. There is only reliability data that has been published.		
Alternate outcome measure	s for	conside	ration to	Link				
assess like constructs  1. Situational Characteristics Questionnaire				Pavlou M, Davies RA, Bronstein AM. The assessment of increased sensitivity to visual stimuli in patients with chronic dizzines J Vestib Res. 2006; 16(4-5): 223-31.				
2.								
3.								

Dannenbaum E, Chilingaryan G, Fung J. Visual Vertigo Analogue Scale: An assessment questionnaire for visual vertigo. *J of Vestibular Research* 2011: 153-159

Instrument name: Disability Rating Scale										
Reviewer: Jennifer Fay, F	T, DPT a	nd Trac	y Ric	ce, F	T, MP	H, NCS		Date of review: March 29, 2013		
ICF domain (check all tha	t apply):					<del></del>	L			
Body function/stru	cture	x_	Ac	tivit	ty	xP	arti	cipation		
Construct/s measured (ch	neck all t	hat app	ly):				V1.74 000			
Body structure and Fun	ction	200 Page 4 Page 9 Page		Å	ctivity			Participation		
Dizziness		x_B						Community function		
Dual Tasks		_xG				•		Driving		
Muscle performance		x_ <u> </u>				oility		x_Health and wellness		
Sensory integration Somatosensation		. — –	rans	rers	i			Home management Leisure/Recreational		
Spatial Orientation			her:					activities		
Vertigo								Life satisfaction		
VOR/ Gaze stability								Quality of life		
Other:								_x_Role function		
								Shopping		
Other:								Social function		
								_xWork		
								Other:		
		Name of the Park			Name ( ) do not per ( ) manual (	Western Programmer and American American				
Link to rehabmea  Recommendation			iary.	And Andrews	Service of the servic					
Acuity	4	3		2		1	Co	omments		
Acute= 0-6 Weeks	100 100 100 100 100 100 100 100 100 100	**************************************		X	rapapa (emerc)					
							·			
Chronic = > 6 Weeks				X						
Overall Comments:	There i	is limite	d psy	/cho	metri	c research	on	this measure.		
Diagnostic Categories	4	3	2		1	N/A*	C	comments		
I- Peripheral Dysfunction			X							
II-Central Dysfunction			X							
III-BPPV										
IV-Other										
*Not applicable: Outcome	e measu	re not r	elate	d to	Diagr	nostic Cate	gor	ies		
Overall Comments:		There	is lin	nited	d data	on psycho	ome	tric properties for this measure.		

Entry-Level Criteria		learn i	nts should to ister tool	expose	s should be d to tool (e.g. literature)	Comments		
Should this tool be required for entry level curricula?		YES	X	YE5	NO	Students should be exposed to this tool once they have a firm background knowledge of vestibular dysfunction.		
Research Use		YES		NO.		Comments		
Is this tool appropriate for use in intervention research studies?  Is there a need for additional research on this measure? If so, where are the gaps?		X		X		There need to be more research studies done validating this measure compared to other measures of symptom severity.		
Alternate outcome measu	res for	conside	ration to	Link				
assess like constructs  1.		The second secon						
2.								
3.								
Additional information on measure).	this me	asure ca	n be found	at <u>www.</u>	rehabmeasures	s.org (insert specific link to		

Shepard, N. T., Telian, S. A., & Smith-Wheelock, M. (1990). Habituation and balance retraining therapy: a retrospective review. *Neurologic Clinics*.

Clendaniel RA. Outcome Measures for Assessment of Treatment of the Dizzy and Balance Disorder Patient, Otolaryngolic Clinics of North America. 2000: 33; 519-33.

Hall CD, Herdman SJ. Reliability of Clinical Measures Used to Assess Patients with Peripheral Vestibular Disorders. 2006: 30;74-81

Shephard NT, Smith-Wheelock M, Telian SA, Raj A. Vestibular and Balance Rehabilitation Therapy. Acta Otol Rhinol Laryngol 1993:02: 198-205.

Instrument name: Berg E	Balance S	cale								
Reviewer: Linda B. Horn, Karen H. Lamb				Date of review: 6/19/13						
ICF domain (check all tha	t apply):									
Body function/struc	ture	X	_ Act	ivity	-	Par	ticip	ation		
Construct/s measured (cl	heck all t	hat app	ly):							
Body structure and Fur	nction			Acti	vity			Participation		
Dizziness		_X_Balance/falls						Community function		
Dual Tasks		Gait (include stairs)						Driving		
Muscle performance		High Level Mobility Transfers						Health and wellness		
Sensory integration Somatosensation		Transfers						Home management Leisure/Recreational		
Spatial Orientation		Other:						activities		
Vertigo								Life satisfaction		
VOR/ Gaze stability								Quality of life		
Other:								Role function		
								Shopping		
Other:								Social function		
								Work		
								Other:		
Link to rehabmea	sures.or	g summ	arv:	Berg	Bala	nce Scale				
Recommendation			, ,				•			
Acuity	4	3		2		1	Cor	mments		
Acute= 0-6 Weeks				X						
7.00.0										
Chronic = > 6 Weeks				Х						
Overall Comments:	Studies	do not	indi	cate if	subj	ects were	in t	he acute or chronic phase		
Diagnostic Categories	4	3	2	1		N/A*	Co	omments		
I- Peripheral Dysfunction			Х							
II-Central Dysfunction			Х							
III-BPPV			Х							
IV-Other			Х				М	lultisensory disequilibrium,		
							ur	nknown vestibular dysfunction		
*Not applicable: Outcom	e measu	re not re	elate	d to Di	iagn	ostic Cate	gori	es		

Overall Comments:  Entry-Level Criteria		best me 2003). T the Berg the rem the DGI The BBS dwelling Student learn to	here was g Balance staining 26 but not the shas been g elderly, Notes should	function, the Berg Balance Scale may not be a dentify individuals at risk of falling (Whitney 663% (44/70) agreement for risk of falling between the Escale (BBS) and the Dynamic Gait Index (DGI) were identified as having an increased fall risk at BBS.  tested in many populations including community, PD, SCI & TBI.  Students should be exposed to tool (e.g. to read literature)					
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?  Is there a need for additional research on this measure? If so, where are the gaps?		X				Research needed to establish reliability when using the BBS to test individuals with vestibular dysfunction. Also need to determine the usefulness of the BBS in different types of vestibular diagnoses as well as chronicity (acute vs chronic).			
Alternate outcome measur assess like constructs	es for C	onsidera	ation to	Link					
Dynamic Gait Index				DGI					

Additional information on this measure can be found at www.rehabmeasures.org.

#### References

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. Find it on PubMed

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. Find it on PubMed

Cohen, H. S. & Kimball, K. T. (2008). "Usefulness of some current balance tests for identifying individuals with disequilibrium due to vestibular impairment." J Vest Rehabil 18:295-303.

Whitney, S., Wrisley, D., & Furman, J. (2003). "Concurrent validity of the Berg Balance Scale and the Dynamic Gait Index in people with vestibular dysfunction." Physiotherapy Research International 8(4): 178-186.

Instrument name: Bow a	nd Lean	Test							
Reviewer: Linda B. Horn, Karen H. Lamb	-		-				Date of review: 2/17/13		
ICF domain (check all tha	t apply):					1			
x Body function/stru	cture								
Construct/s measured (ch		hat app	•						
Body structure and Fun	iction	Da		ctivity			Participation		
x_DizzinessDual TasksMuscle performanceSensory integrationSomatosensationSpatial Orientation _x_VertigoVOR/ Gaze stabilityOther:Other:		Balance/fallsGait (include stairs) High Level Mobility TransfersOther:					Community functionDrivingHealth and wellnessHome managementLeisure/Recreational activitiesLife satisfactionQuality of lifeRole functionShoppingSocial functionWorkOther:		
Link to rehabmea	sures.or	g summ	ary:						
Recommendation	Catego	ries							
Acuity	4	3	2		1	Co	mments		
Acute= 0-6 Weeks			X						
Chronic = > 6 Weeks			Х						
Overall Comments:									
Diagnostic Categories	4	3	2	1	N/A*		omments		
I- Peripheral Dysfunction				Х			ot used for differential diagnosis		
II-Central Dysfunction				Х		_	lot used for differential diagnosis		
III-BPPV			X			v re	May need electronystagmography, ideonystagmography, video ecorder, infrared video goggles, or renzel goggles to view nystagmus		

IV-Other		X		determin horizonta positive, help ider Not used	is performed first to ne the presence of al canal BPPV; if Roll Test is Bow and Lean Test can ntify the involved side for differential diagnosis				
*Not applicable: Outcome m  Overall Comments:	This is		d-alone test – the Roll Test <u>must</u> be performed prior						
Entry-Level Criteria	learn t	its should o ister tool	exposed	should be to tool (e.g. terature)	Comments				
Should this tool be required for entry level curricula?	YES	NO x	YES	NO x	This test is beyond entry-level practice.				
Research Use	YES		NO		Comments				
Is this tool appropriate for use in intervention research studies?	х				Can assist in determining side of the involvement				
Is there a need for additional research on this measure? If so, where are the gaps?	x				Need to determine reliability and validity of this measure				
Alternate outcome measures assess like constructs	s for consider	ration to	Link						
1. Roll Test									
Additional information on thi measure).	s measure ca	n be found	at <u>www.re</u>	ehabmeasures	org (insert specific link to				

Choung, Y. H., et al. (2006). "'Bow and Lean test' to determine the affected ear of horizontal canal benign paroxysmal positional vertigo. Laryngoscope (116): 1776-1781.

Lee, J. B., et al. (2010). "Efficacy of the "Bow and Lean Test" for the management of horizontal canal benign paroxysmal positional vertigo." Laryngoscope (120): 2339-2346.

Instrum	ent name: Four So	quare St	ер	Test						
Review	er: Linda B. Horn, I Karen H. Lambe					5;				Date of review: 6/16/13
ICF dom	nain (check all that	apply):								
B	ody function/struc	cture	-	X	_ Ac	tivit	ty	Pa	artio	cipation
	ct/s measured (ch		ha	t appl	y):					
	structure and Fun	ction			_		ctivity			Participation
	iness		X Balance/falls							Community function
	l Tasks		Gait (include stairs)							Driving
	scle performance		—— High Level Mobility Transfers						Health and wellness	
	sory integration natosensation		-			ers				Home management Leisure/Recreational
	tial Orientation		Other:							activities
Ver										Life satisfaction
	R/ Gaze stability									Quality of life
Oth	· ·									Role function
										Shopping
Oth	er: Oculomotor									Social function
										Work
										Other:
	Link to rehabmeas		_		ary:	Fou	r Squa	re Step T	<u>est</u>	
	Recommendation	_	rie							
	Acuity	4		3		2		1	Co	omments
Acute=	0-6 Weeks			X						
Chronic	= > 6 Weeks			X						
Overall	Comments:									
Diagno	ostic Categories	4	3		2		1	N/A*	(	Comments
I- Periph	neral Dysfunction		X							
II-Centra	al Dysfunction		X							
III-BPPV	'		X						N	May be useful if balance
										mpairment persists after
									s	successful canalith repositioning
									_	naneuver
IV-Othe	r		X						N	Multisensory disequilibrium,

					unknown	vestibular dysfunction					
*Not applicable: Outcome	measu	re not rel	ated to Di	agnostic Ca							
Overall Comments:		(older a disorder cut-off	dults <u>&gt;</u> 65 rs who have score of >	y/o and you ve difficulty 12 sec iden	unger adults < changing dire	n identifying individuals 65 y/o) with vestibular ctions (Whitney, 2007). A als with vestibular or falls.					
Entry-Level Criteria		learn to	s should ter tool	Students s exposed t to read lit	o tool (e.g.	Comments					
Should this tool be required for entry level		YES	NO	YES	NO						
curricula?		^		^							
Research Use		YES		NO		Comments					
Is this tool appropriate for use in intervention research studies?		х									
Is there a need for additional research on this measure? If so, where are the gaps?		X				Inter- and intra-rater reliability not established in this population. SEM, MCD, & MCID not established.					
Alternate outcome measurassess like constructs	res for (	considera	ation to	Link							
Additional information on to Four Square Step Test Instr			be found	at <u>www.rel</u>	<u>nabmeasures.</u>	org.					
roar square step rest misti	actions										

Dite, W., Connor, H. J., et al. (2007). "Clinical identification of multiple fall risk early after unilateral transtibial amputation." Arch Phys Med Rehabil 88(1): 109-114. Find it on PubMed

Dite, W. and Temple, V. A. (2002). "A clinical test of stepping and change of direction to identify multiple falling older adults." Arch Phys Med Rehabil 83(11): 1566-1571. Find it on PubMed

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

Instrument name: Function	onal Rea	ch Test						
Reviewer: Linda B. Horn, Karen H. Lambe				;				Date of review: 7/1/13
ICF domain (check all that	apply):							
Body function/struct	ure	<u>X</u>	_ Activ	vity		Pa	rtici	pation
Construct/s measured (ch		nat app	ly):					
Body structure and Fun	ction	V D	مسمام		tivity	'		Participation
DizzinessDual TasksMuscle performanceSensory integrationSomatosensationSpatial OrientationVertigoVOR/ Gaze stabilityOther:Other: Oculomotor		XBalance/fallsGait (include stairs) High Level Mobility TransfersOther:						Community functionDrivingHealth and wellnessHome managementLeisure/Recreational activitiesLife satisfactionQuality of lifeRole functionShoppingSocial functionWorkOther:
Link to rehabmea	sures.org	g summ	ary: [	Func	tiona	al Reach	Гest	/Modified Functional Reach Test
Recommendation	Categor	ies						
Acuity	4	3		2		1	Co	omments
Acute= 0-6 Weeks				Х				
Chronic = > 6 Weeks				Х				
Overall Comments:								
Diagnostic Categories	4	3	2		1	N/A*		Comments
I- Peripheral Dysfunction			Х					
II-Central Dysfunction			X					
III-BPPV			X				i	May be useful if balance impairment persists after successful canalith repositioning maneuver
IV-Other			Х					Multisensory disequilibrium,

				unknowr	vestibular dysfunction			
*Not applicable: Outcome m	easure not re	lated to D	iagnostic C	ategories				
Overall Comments:	(Dizzin	ess Handic	peripheral vestibular disorders and c/o dizzines ap Inventory ≥ 50) don't reach as far as individua isorders and less c/o dizziness (Dizziness Handica					
Entry-Level Criteria	Studen learn t	ts should	exposed	should be to tool (e.g. iterature)	Comments			
Should this tool be required for entry level curricula?	YES	NO	YES	NO				
Research Use	YES		NO		Comments			
Is this tool appropriate for use in intervention research studies?			Х		There are other tools that are better to measure balance in individuals with vestibular disorders.			
Is there a need for additional research on this measure? If so, where are the gaps?	X				Need to determine reliability and validity of measure for this population.			
Alternate outcome measures assess like constructs	for consider	ation to	Link					
Additional information on this	measure ca	n be found	at <u>www.re</u>	<u>ehabmeasures</u>	.org.			

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

Mann, G. C., Whitney, S.L., et al. (1996). "Functional reach and single leg stance in patients with peripheral vestibular disorders." J Vestib Res 6(5); 343-353. Find it on PubMed

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

Instrument name: Roll Test											
Reviewer: Linda B. Horn, Karen H. Lamb		Date of review: 6/2/13									
ICF domain (check all that apply):											
x Body function/stru	Activity Parti				cipation						
Construct/s measured (check all that apply):											
Body structure and Fur	nction	Activity				Participation					
x_DizzinessDual TasksMuscle performanceSensory integrationSomatosensationSpatial Orientation _x_VertigoVOR/ Gaze stabilityOther:Other:		Balance/fallsGait (include stairs) High Level Mobility TransfersOther:				Community functionDrivingHealth and wellnessHome managementLeisure/Recreational activitiesLife satisfactionQuality of lifeRole functionShoppingSocial functionWorkOther:					
Link to rehabmea	sures.or	g summ	ary:								
Recommendation	n Categoi	ries									
Acuity	4	4 3		2 1		Comments					
Acute= 0-6 Weeks			Х								
Chronic = > 6 Weeks			Х								
Overall Comments:											
Diagnostic Categories 4		3	2	1	N/A*	Comments					
I- Peripheral Dysfunction			X			To determine presence/absence of BPPV					
II-Central Dysfunction			X			To determine presence/absence of BPPV					
III-BPPV			X			May need electronystagmography, videonystagmography, video recorder, infrared video goggles, or					

				Frenzel ge	oggles to view nystagmus						
IV-Other		Х		To deterr	nine presence/absence of						
				BPPV							
*Not applicable: Outcome measure not related to Diagnostic Categories											
Overall Comments:	Variations to test procedure:										
	•	• 30° neck flexion									
	•	No neck flexion									
	•	180-degree Supine Roll Test (Lim, 2013)									
		<ul> <li>Starting from the end position of the Roll Test, the</li> </ul>									
		head is rotated 180° to the opposite side									
					id a video eye movement						
		recorder were used to measure SPV (slow phase									
		velocity) and determine which side was the affected									
		side.									
		No statistically significant difference was noted									
		between the Roll Test and the 180-degree Supine									
		Roll Test in the rate of positive findings.									
		Success rate for determining the affected side when     Using the Poll Test, 180 degree Supine Poll Test and									
		using the Roll Test, 180-degree Supine Roll Test and the Bow and Lean Test was 84.4% (91% for geotropic									
		and 76.3% for apogeotropic)									
	Studer	Students should Students should be Comments									
Entry-Level Criteria	learn t	0	exposed to	tool (e.g.							
	admin	ister tool	to read literature)								
Should this tool be	YES	NO	YES	NO	May need						
required for entry level					electronystagmography,						
curricula?	X		X		videonystagmography,						
					video recorder, infrared						
					video goggles, or Frenzel						
					goggles to view						
					nystagmus						
Research Use	YES	_	NO		Comments						
Is this tool appropriate	х				Can assist in						
for use in intervention					determining side and/or						
research studies?					type of horizontal canal						
					BPPV						
Is there a need for	х				Need to determine						
additional research on					reliability and validity of						

this measure? If so,				this measure & the		
where are the gaps?				variations		
Alternate outcome measures for consideration to			Link			
assess like constructs						
Additional information on this measure can be found at <a href="https://www.rehabmeasures.org">www.rehabmeasures.org</a> (insert specific link to						
measure).						

Baloh, R. W., Jacobson, K., & Honrubia, V. (1993). Horizontal semicircular canal variant of benign positional vertigo. Neurology;43:2542-2549.

Fife, T. D. (1998). Recognition and management of horizontal canal benign positional vertigo. Amer J Otol 19:345-351.

Herdman, S. J. & Tusa, R. J. Physical therapy management of benign positional vertigo. In: Herdamn, S. J, ed. (2007). Vestibular Rehabilitation. 3<sup>rd</sup> ed. Philadelphia: F. A. Davis.

Lim, H. J., Park, K., Park, H. Y., & Chong, Y. (2013). The significance of 180-degree head rotation in supine roll test for horizontal canal benign paroxysmal positional vertigo. Otol Neurotol; 34(4):736-742