Assessing Balance Exercise Intensity: A Guide for PT Clinicians

Jennifer M. Nash, PT, DPT, NCS

Fact Sheet

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ACADEMY OF NEUROLOGIC PHYSICAL THERAPY

BALANCE & FALLS SIG

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ACADEMY OF NEUROLOGIC PHYSICAL THERAPY

Contact us:
ANPT
1935 County Rd. B2 W.
Ste 165
Roseville, MN 55113
Phone: 952.646.2038
info@neuropt.org
www.neuropt.org

a component of

APTA American Physical Therapy Association

Why is Balance Exercise Intensity Important?

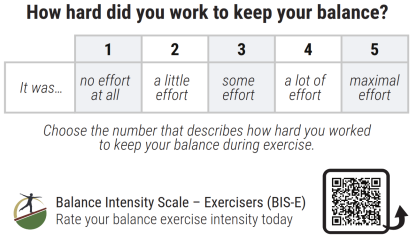
Balance exercise training is crucial for patient safety and enhancing rehabilitation effectiveness, especially as individuals age. For adults over 65, current recommendations suggest at least **2 hours per week of balance exercises** at a **moderate to high level of balance challenge**.

This fact sheet provides two distinct approaches focusing on the exerciser's self-perception, and another providing objective observational criteria for the clinician. This personalized assessment allows for appropriate initial prescription and subsequent modulation of balance exercises, leading to safer and more effective training programs.

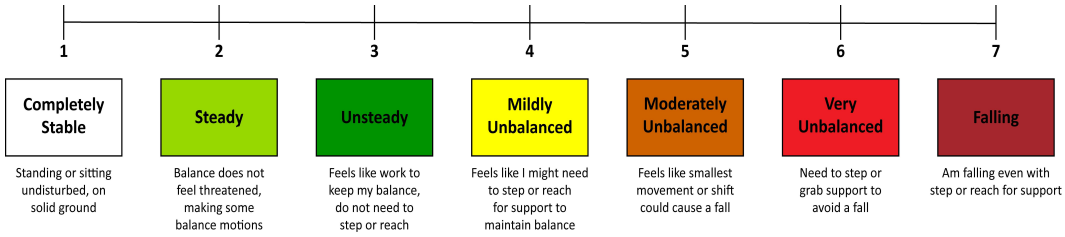
The Exerciser's Perspective: 2 Methods of Self-Rating Balance Challenge

1. The **Balance Intensity Scale -Exerciser (BIS-E) by Farlie et al.** is a self-rating scale that measures the level of challenge an individual experiences during a balance task. It functions similarly to pain scales or scales for perceived exertion, but instead focusses on the work to maintain balance. This allows for immediate assessment of balance intensity during or after activities.

How to Use the BIS-E: Orient the exerciser to the indicators of balance challenge using the 1-5 scale below (3 being moderate). Then during exercise ask the exerciser: "How hard did you have to work to keep your balance during this task? It was..."



2. The **Rate of Perceived Stability (RPS) in Espy and Lyon** is another self-rating scale. This measures the challenge to the balance systems posed by the task to that person by noting how stable or unstable the individual feels doing that task. It is independent of exertion, heart rate, or fatigue.



How to use: Individuals should be instructed in how to use the scale by being allowed to read the definitions and asking questions, then using the scale during a short balance training practice. To use, the scale can be presented to the individual during balance tasks if the task allows. If the task is too challenging, too fast, or if the dual-task cost is too high, the scale can be presented just after task completion.

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The Therapist's Perspective: Objective Observation

The **Balance Intensity Scale – Therapist (BIS-T) by Farlie et al.** provides observable indicators to guide clinician's assessment of balance challenge.

How to use: For each item, score "Yes" (1) if observed, or "No" (0) if not observed or unsure. Calculate the Total Raw Score: Sum all the "Yes" responses from the 11 scored items. Use the conversion table below to translate the raw score into a Rasch-converted BIS-T score.

Balance Intensity Scale – Therapist (BIS-T)

STEP 1:	*For any item 'unsure' or unable to be observed, score NO*	0 score	1
PRE-TASK	***Hesitation to Start***		
	Did the person hesitate, for any reason, before attempting the task?	No ☐	Yes ☐
	Did the person hesitate more than 5 seconds before attempting the task?	No ☐	Yes ☐
	Starting Position		
	Did the person require more than one attempt to get into the starting position?	No ☐	Yes ☐
IN-TASK PERFORMANCE ANALYSIS	***Postural Reactions***		
	Did you see any postural reaction associated with the task?	No ☐	Yes ☐
	Did you see any initiation of leg movement or actual step/s to control postural sway?	No ☐	Yes ☐
	Did you see any initiation of arm movement or actual reach or grab to control postural sway?	No ☐	Yes ☐
	Bracing and Breathing		
	Did the person hold any part of their body stiff or rigid during this task? *i.e. holding limb/s stiff or rigid, making fist, clenching jaw, pulling on own clothing or propping limbs e.g. hand on thigh, increased tone and associated reactions, shoulder elevation*	No ☐	Yes ☐
	Did the person change their breathing pattern during the task? *i.e. increased or decreased depth of breathing, sighing, breath holding or faster rate of breathing. More shallow breathing may be characterized by increased upper chest breathing, shoulder girdle elevation or abdominal movement.*	No ☐	Yes ☐
OVERALL-TASK ANALYSIS	***Balance Threshold***		
	Did the person appear unsteady at any time while preparing for or performing tasks?	No ☐	Yes ☐
	Did you have to say anything to prevent the person losing balance?	No ☐	Yes ☐
	Did you have to provide any physical assistance to prevent the person losing balance?	No ☐	Yes ☐
	Did the person fall* during the task? – NOT SCORED	No	Yes

Total raw score	0	1	2	3	4	5	6	7	8	9	10	11
Rasch converted BIS-T score	0	10	19	26	32	38	44	51	60	71	84	100

STEP 2:	How hard did the person work to maintain their balance?				
Global Rating Balance Effort	1 *No effort at all*	2 *A little effort*	3 *Some effort*	4 *A lot of effort*	5 *Maximal effort*

Version: 25/03/2025 Adapted from an Open Access article: Farlie et al., (2019) PTJ, doi:10.1093/ptj/pzz092/5531450. Oxford University Press

BIS versions used with permission: Dr Farlie, Monash University, 2025

By using both the patient's self-report (BIS-E or RPS) and your objective ratings (BIS-T), you can gain a comprehensive understanding of the challenge posed by balance interventions, allowing for more appropriate and effective therapy. This combined approach ensures that therapeutic exercises are prescribed, monitored, and progressed effectively for each individual. It also provides an opportunity to strengthen your therapeutic relationships with patients and give them agency and opportunities to self-monitor the progress of their exercise programs.