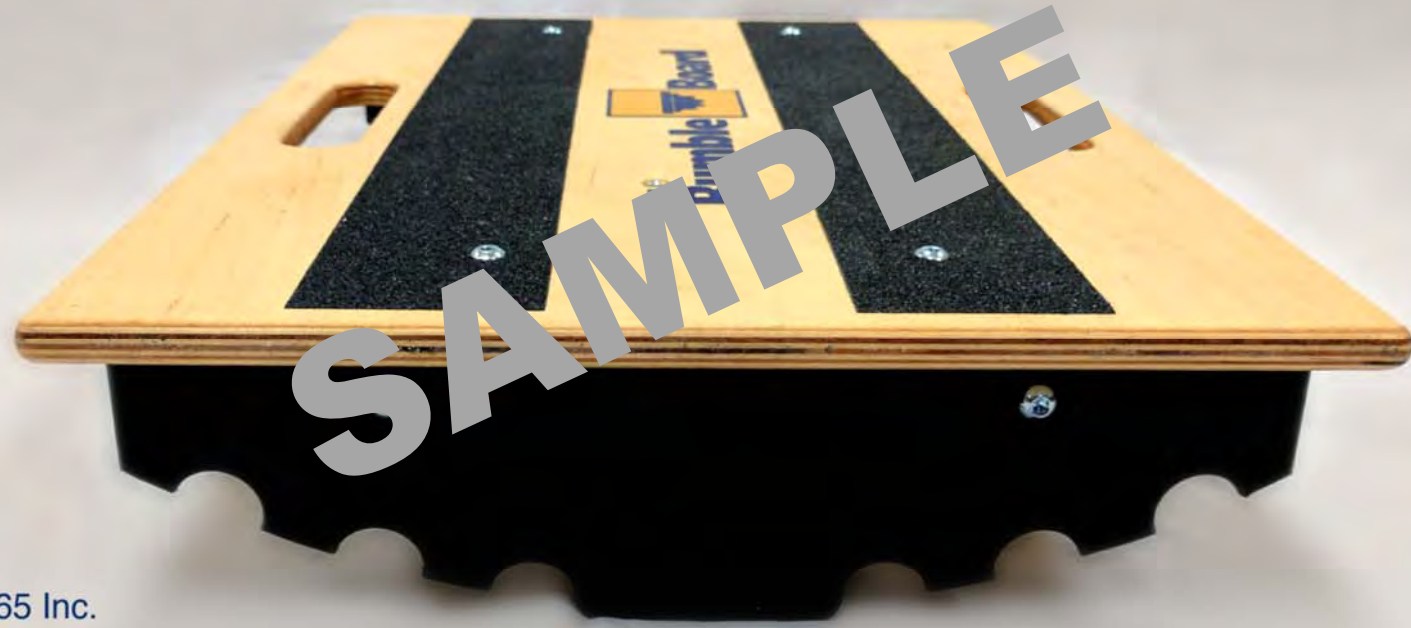


HAAS+
Balance  **Book**



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100+ Exercises For PTs and OTs

Shane Haas, PT

HAAS  **Balance**  **Book**

This book contains over 100 static, dynamic, and reactionary exercises to improve balance. Because balance is the best way to prevent falls, this

actionary exercises are book dou-

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The primary goal of this book is to show a variety of exercises for rehabilitating balance. The hope is that having such a list of exercises will help clinicians expand their balance interventions. However, because there is more to balance training than just picking exercises, the following pages will cover five foundational points, or “laws,” for balance training:

1 Law 1: Standing balance starts with “letting go.” If a patient cannot stand without hand support, then they are not ready for balance challenges. Focus instead on exercises that will help decrease the need for hand support (see pages 50-55 for more information). Below is an example 5-step progression for standing without hand support (therapist is positioned near patient to facilitate, spot, and encourage patient as needed):

Step 1: 2-hands horizontal. Patient stands and holds horizontal supports (parallel bars, ADL Balance Trainer, edge of table, etc.) with both hands. Emphasis is on equal weight distribution in lateral (not too heavy on left or right foot) and anterior-posterior directions (not too heavy through heels or toes).

Step 2: 2-hands vertical. Patient stands and holds onto vertical supports (poles, ADL Balance Trainer, etc.) with both hands. Vertical supports provide sensory feedback for balance while reducing weight bearing through the arms and hands. They also help the patient assume a more upright standing posture and increase use of legs for support.

Step 3: 2-hands unstable surface. Patient stands with hands resting on unstable surfaces such as balls, foam, etc. Unstable surfaces provide some sensory feedback, but are ineffective for weight bearing and support. Because unstable surfaces shift and move, the patient is encouraged to rely more on their trunk and legs for balance.

Step 4: 1-handed standing. Using only 1 hand for support, the patient progresses through steps 1-3 (horizontal, vertical, and unstable surface). Patient is encouraged to alternate hands, one for support and the other for reaching/placing tasks.

Step 5: 2-handed tasks. Introduce simple 2-handed tasks (uncoupling a stack of cones, passing a ring from one hand to the other, uncoupling clothespins, etc.) to encourage patient to “let go” of support structures. Because the task requires both hands, the patient cannot continue to both hold on and complete the task. As such, patients will typically turn lose of support structures. As steadiness and confidence improve, progress patients by adding balance challenges (see Law 2).

2 Law 2: Add movement or stance challenges before introducing unstable or uneven surfaces. Surface challenges (foam, rocker board, hip stick, etc.) create larger balance disruptions than movements (head turns, reaching up, weight shifting, etc.) or stances (feet together, split stance, heel-toe stance, etc.). As such, when introducing balance challenges, start by adding movements or changing stances. Progress to unstable surfaces as bigger balance challenges are needed.

3 3rd law: Training should address static, dynamic, and reactionary balance. There is little carryover among the three types of balance exercises. As such, Balance training should address all 3 types:

1. **Static balance:** Feet stay in one place. The body can move (lean, turn, sway, etc.), however, the feet do not lift completely off the ground and change position, e.g., the base of support remains the same throughout the exercise.
2. **Dynamic balance:** At least one foot lifts completely off the ground and the body does change position, i.e., moves from one location to another. The base of support changes during the exercise.
3. **Reactionary balance:** The patient reacts to balance challenges based on external stimuli. Cues are typically presented in an unexpected and random manner. Example cues include numbers, colors, and perturbations, to name a few.

To read the full *Introduction* please visit www.adlbalance.com and purchase book.

SAMPLE

Exercise 6

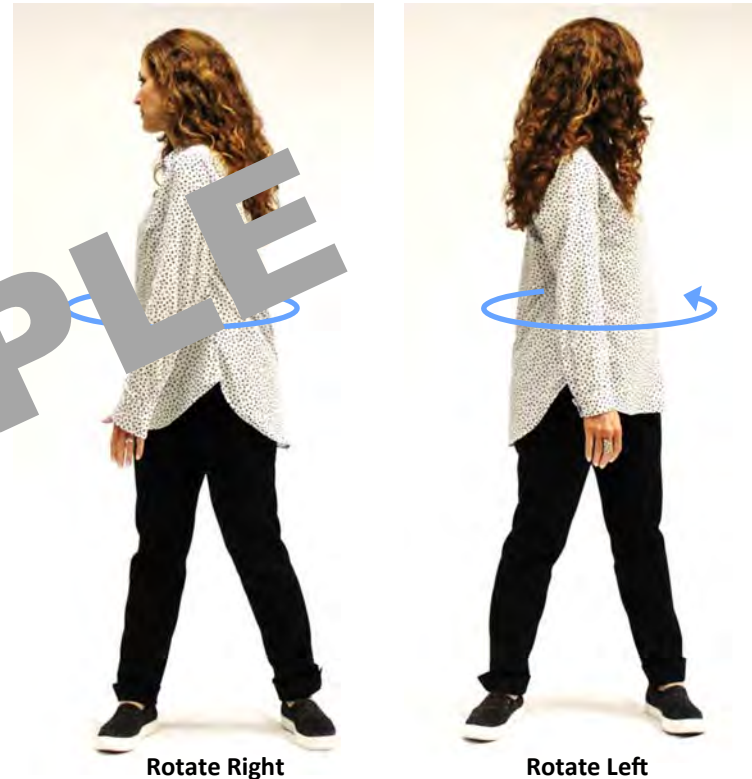
Weight Shifting—Rotations

Start: Same as *Static Standing*.

Instructions: Patient rotates their body left and right, looking over their shoulder in each direction. Movement occurs through head, neck, trunk, and legs. Weight shifting occurs toward the ipsilateral side of the rotational movement.

Finish: At end of predetermined time period or stopped early if patient is unable to remain steady at least 20% of exercise time.

Benefit: Rotational weight shifting is important in activities that include reaching across midline.



Exercise 7

Weight Shifting - Forward & Back

Start: Same as *Static Standing*, except feet are in a split stance with one foot forward and one foot back.

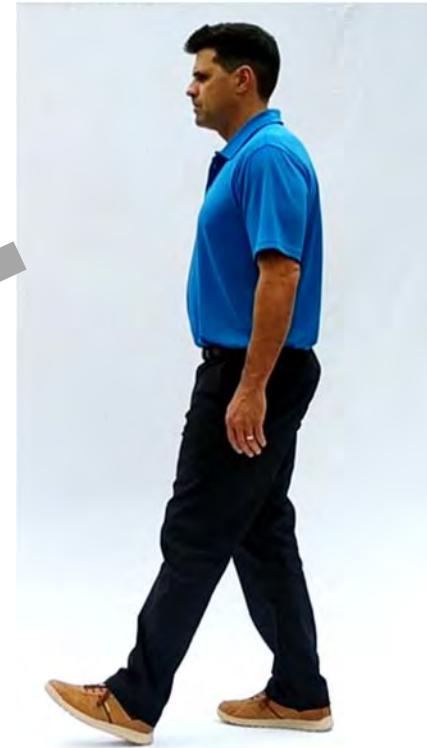
Instructions: Patient moves the body forward & back, shifting weight from one foot to the other. Patient instructed to avoid stepping. Trunk movements are minimized as the motion occurs primarily through the legs.

Finish: At end of predetermined time period or stopped early if patient is unable to remain steady at least 20% of exercise time.

Benefit: Forward & back weight shifting is important ADL such as reaching deep into pantry, or opening a door, etc.



Shift Forward



Shift Back



Exercise 13

Standing + Reaching Overhead

Start: Same as *Static Standing*.

Instructions: Patient stands and raises arms, reaching and looking overhead, i.e., like changing a lightbulb, while trying to minimize balance deviations.

Finish: At end of predetermined time period or stopped early if patient is unable to remain steady at least 20% of exercise time.

Benefit: Reaching directly overhead challenges balance, particularly in the vertical direction. Functional carryover includes changing a lightbulb, changing ceiling fan, adjusting a ceiling fan, etc.



Exercise 14

Standing + Far Reach

Start: Same as *Static Standing*.

Instructions: Patient reaches out in front of the body while trying to minimize balance deviations.

Finish: At end of predetermined time period or stopped early if patient is unable to remain steady at least 20% of exercise time.

Benefit: Far reaches challenge balance, particularly in the anterior direction. The further the reach, the greater the challenge. Functional carryover includes reaching deep in pantry, fridge, dryer, shelves, etc.



Exercise 18

Tandem Stance

Start: Same as *Static Standing*, except in a tandem stance, e.g., one foot directly in front of the other. Stance is similar to that of standing on a narrow balance beam.

Instructions: Patient stands in tandem stance while trying to minimize balance deviations.

Finish: At end of predetermined time period or stopped early if patient is unable to remain steady at least 20% of exercise time.

Benefit: Performing balance exercises in a tandem stance helps improve medial-lateral stability.

Variations:

- A. Modify stance to make easier by standing directly in front of each other, e.g., inside border of heel touches inside border of toe on opposite foot.



Exercise 25

One Foot on Unstable Surface

Start: Same as *Static Standing*, except with foot of unaffected leg on an unstable surface (foam, inflatable, etc.).

Instructions: Patient stands with unaffected foot on an unstable surface while trying to minimize balance deviations.

Finish: At end of predetermined time period or stopped early if patient is unable to remain steady at least 20% of exercise time.

Benefit: Placing foot of the unaffected leg on an unstable surface puts the patient at a disadvantage for standing and balancing. In turn, the demand on the affected leg is increased, which helps improve weight acceptance, strength, and balance on the affected side.



Unaffected Foot on Inflatable

To read the full *Static Balance* section, please visit www.ADLbalance.com and purchase book.

SAMPLE

Exercise 36

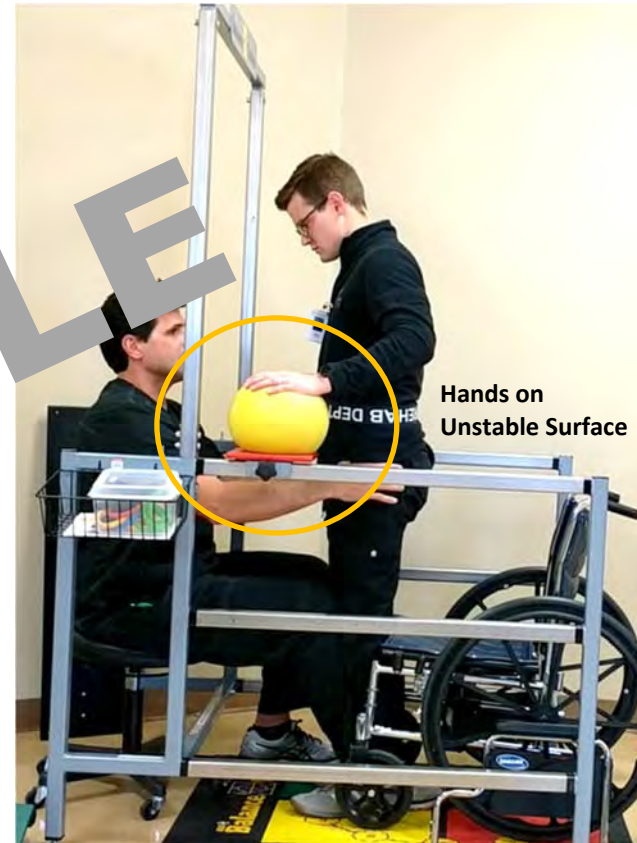
Standing + Unstable Hand Support

Start: Same as *Standing + Hand Support*, except patient rests hands on unstable objects (balls, posts, therapist hands, etc.) for support.

Instructions: While resting hands on unstable object for support, patient is directed to minimize posture and balance deviations.

Finish: At end of predetermined time period or stopped early if patient is unable to remain steady at least 20% of exercise time.

Comments: Placing hands on unstable surfaces provides limited proprioceptive feedback. Because feedback is limited, patient learns to rely more on trunk and legs more for balance.



Exercise 37

Standing + Single Hand Supports

Start: Same as *Standing + Hand Support*, except patient holds on with only one hand.

Instructions: With single hand support, patient is directed to minimize posture and balance deviations. Patient can also be given a reaching/placing task with unsupported hand (as shown in picture).

Finish: At end of predetermined time period or stopped early if patient is unable to remain steady at least 20% of exercise time.

Comments: Using only one hand for support increases the level of balance difficulty and helps progress patient toward standing without hand support. Adding reaching/placing task prepares patient for functional activities.

Variations:

- A. Vertical hand support
- B. Unstable hand support



To read the full *Learning to Let Go* section, please visit www.ADLbalance.com and purchase book.

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Exercise 47

Gait on Slope

Start: Same as *Standard Gait*, except patient walks on a slope (incline, decline, or cross slope).

Instructions: Patient walks on slope while trying to minimize gait deviations.

Finish: At end of predetermined distance, time, or stopped early if patient is unable to remain steady at least 20% of exercise time.

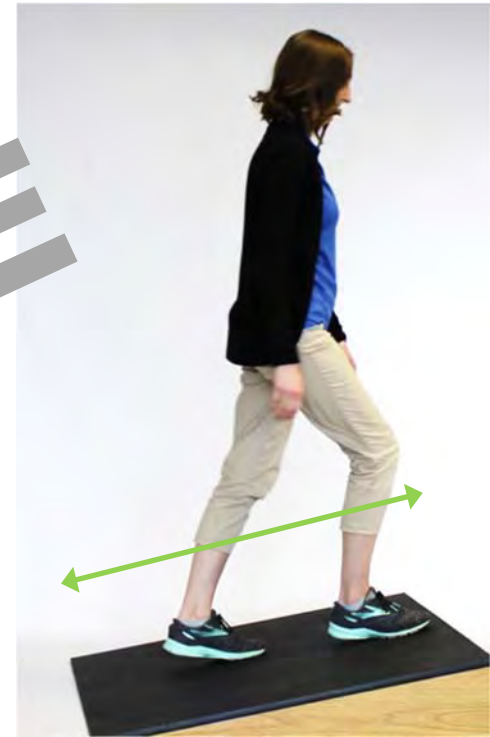
Benefit: Building steadiness on slopes is important to safely navigating uneven surfaces such as hills, uneven pavement/sidewalks, etc.

Variations:

- A. Combine with side, back, cross-over, or high stepping



Side Stepping



Walk Up and Down Slope

Exercise 48

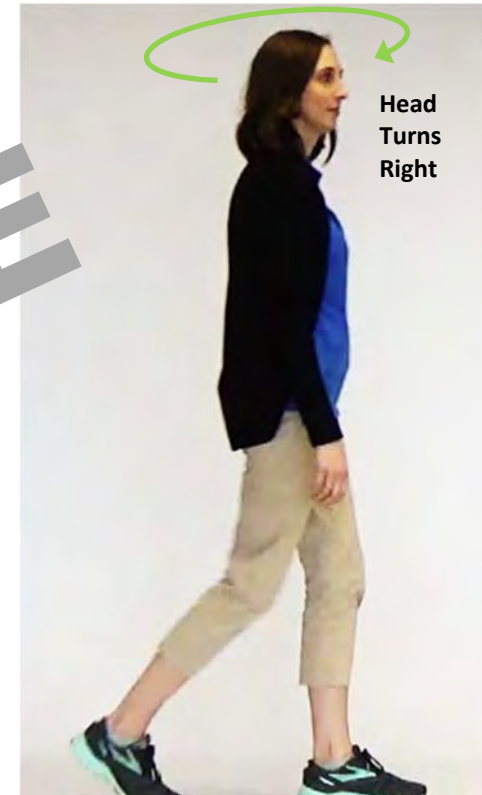
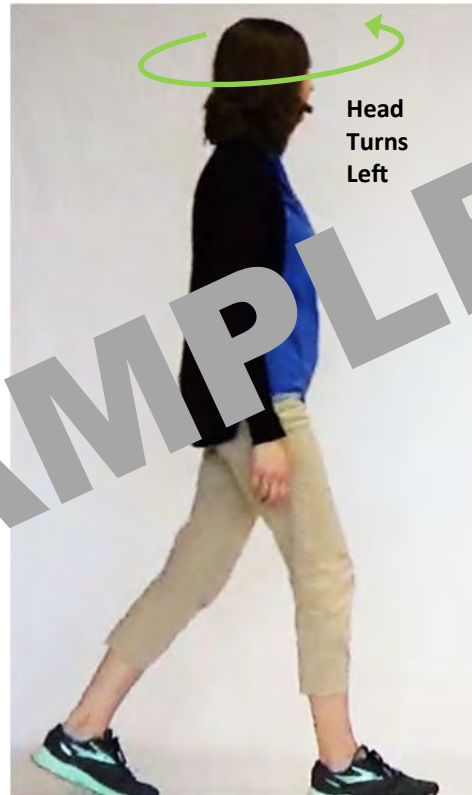
Gait + Head Movements (Turns or Tilts)

Start: Same as *Standard Gait*, except patient walks while moving head left and right (turns) or up and down (tilts).

Instructions: Patient walks and turns (or tilts) head while attempting to minimize gait deviations.

Finish: At end of predetermined distance, time, or stopped early if patient is unable to remain steady at least 20% of exercise time.

Benefit: Improves ability to visually scan the environment while walking—important to identify obstacles, surface changes, etc.



Exercise 51

Gait Over Obstacles

Start: Same as *Standard Gait*, except patient steps over obstacles (hurdles, boxes, etc.).

Instructions: Patient walks over obstacles while attempting to minimize gait deviations.

Finish: At end of predetermined distance, time, or stopped early if patient is unable to remain steady at least 20% of exercise time.

Benefit: Safely stepping over obstacles is important to navigate environmental obstacles such as curbs, uneven sidewalks, steps, cords.

Variations:

- A. Obstacles far apart for longer steps
- B. Taller obstacles for higher steps
- C. Sidestep over obstacles
- D. Step with only 1 foot between obstacles
- E. Step over obstacles placed on only one side of the body



Exercise Variations for Gait Over Obstacles



A. Obstacles far apart for longer strides



B. Taller obstacles for the steps



C. Sidestep over obstacles



D. Step with only 1 foot between obstacles



E. Step over obstacles placed on only one side of the body

Exercise 56

Tapping Drills

Start: Same as *Static Standing*.

Instructions: Patient lifts and lightly touches the ground with pointed forefoot/toes, then returns the foot to the starting position. Sequence is repeated with opposite foot. Patient alternates feet during duration of exercise, while attempting to minimize balance deviations.

Finish: At end of predetermined time or stopped early if patient is unable to remain steady at least 20% of exercise time.

Benefit: Emphasizes motor control/coordination of tapping foot. Builds strength/stability on stance foot.

Variations:

- A. Side taps
- B. Back taps
- C. Stable target (wide cone)
- D. Unstable target (cone upside down)



Exercise 58

Quadrant Stepping

Start: Same as *Static Standing*, except patient standing in bottom-left quadrant.

Instructions: Patient steps forward, positioning both feet in top-left quadrant, while attempting to minimize balance deviations. Patient then steps to the right, positioning both feet in top-right quadrant. A clockwise pattern continues as patient steps to bottom-right quadrant and back to bottom left–quadrant (original starting point).

Finish: At end of predetermined laps, time, or stopped early if patient unable to remain steady at least 20% of exercise time.

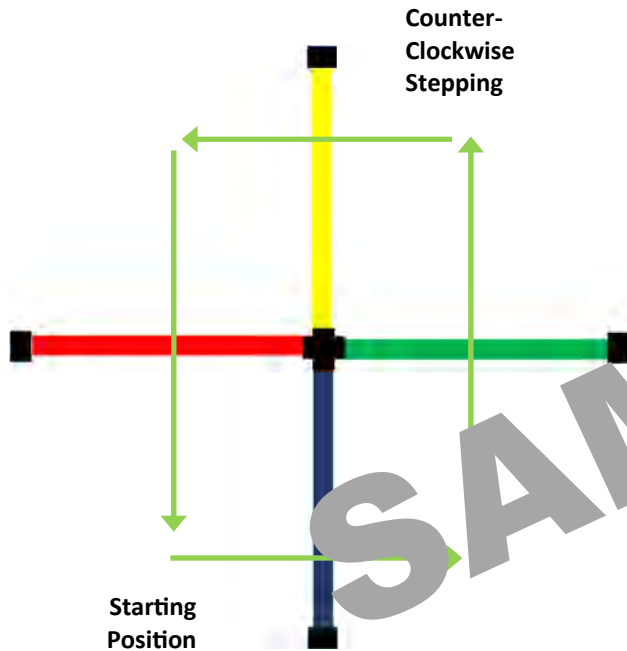
Benefit: Steadiness while stepping over obstacles is important to safely negotiate environmental obstacles such as curbs, doorways, showers, etc.

Variations:

- A. Step in counter-clockwise direction
- B. Raise quadrant off of ground to add difficulty



Exercise Variations for Quadrant Stepping



A. Step in counter-clockwise direction.

B. Raise quadrant off of ground to add difficulty.

To read the full *Learning to Dynamic Balance* series please visit www.adlbalance.com and purchase book.

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Exercise 65

Hand Pull-Release Perturbations

Start: Same as *Static Standing*.

Instructions: Patient curls fingers and holds therapist's curled fingers as they are pulled forward. Therapist randomly releases grip, causing a sudden change in force. Patient tries to minimize balance deviations.

Finish: At end of predetermined time or stopped early if patient is unable to remain steady at least 20% of exercise time.

Benefit: Maintaining balance during unexpected perturbations helps prepare patients for sudden bumps and nudges by people and inanimate objects.

Variations:

A. With eyes closed



Exercise 70

Carrying Unstable Object

Start: Same as *Standard Gait*, except patient walks while carrying an unstable object, such as a ball or balloon on a rail.

Instructions: Patient walks and tries to maintain ball (or balloon) on rail while minimizing gait deviations.

Finish: At end of predetermined distance, time or stopped early if patient is unable to remain steady at least 20% of exercise time.

Benefit: Help prepare patient for sudden shifts in load when carrying unstable items. Improve quick adjustments to avoid losses of balance and/or dropping items being carried.

Variations:

A. Carry a glass of water



Exercise 78

Randomized Turning

Start: Same as *Static Standing*. Therapist places colored targets (red, yellow, green, and blue) on floor at 90-degree intervals surrounding patient.

Instructions: Patient pivots and turns to face the color called out by therapist. If the same color is called twice in a row, the patient turns a full 360 degrees. Goal is to minimize balance deviations while turning. Colored cards are used to randomize color order. Cards (red, yellow, green, and blue) are shuffled, therapist turns card, calls out color, and patient turns to face corresponding target.

Finish: At end of predetermined time, stopped early if patient is unable to remain steady at least 20% of exercise time, or if all colors are turned.

Benefit: Random cues help simulate real-life movements. Pivoting is important to safely change directions in standing and walking.



To read the full *Reactionary Balance* section please visit www.ADLbalance.com and purchase book.

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Exercise 88

Placing Games

Start: Therapist sets up game by placing colored targets (red, blue, yellow, and green) in locations that challenge balance (high, low, off to the side, etc.). Colored items (cones, rings, pegs, etc.) are placed on flat surface (table, raised mat, shelf, etc.) in front of the patient.


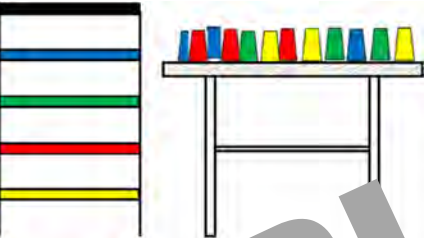
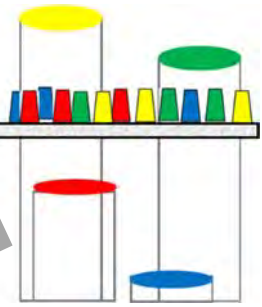
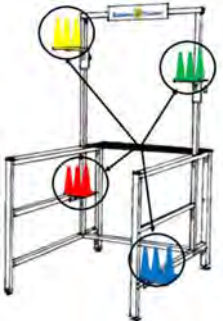
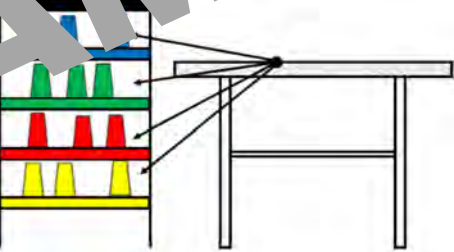
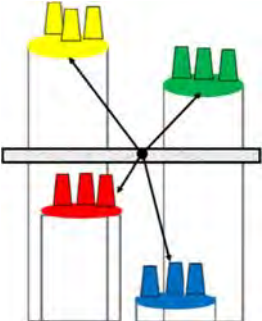
Instructions: Patient places colored items on matching targets, e.g., all of the blue items on the blue target, red items on red target, green items on green target, etc.

Finish: Game ends when all items are correctly placed on targets or when the patient is unable to remain steady at least 20% of exercise time.

Benefit: Add visual discernment challenges to standing/balancing tasks.



Placing Games

ADL Balance Trainer	ADL Reach Trainer	ADL Balance Dots
		
<p>Start: Items are on black platform.</p>	<p>Start: Items in front of patient.</p>	<p>Start: Items in front of patient.</p>
		
<p>Finish: All items are correctly placed on square platforms.</p>	<p>Finish: All items are correctly placed on rectangular shelves.</p>	<p>Finish: All items are correctly placed on round Dots.</p>

Exercise 89

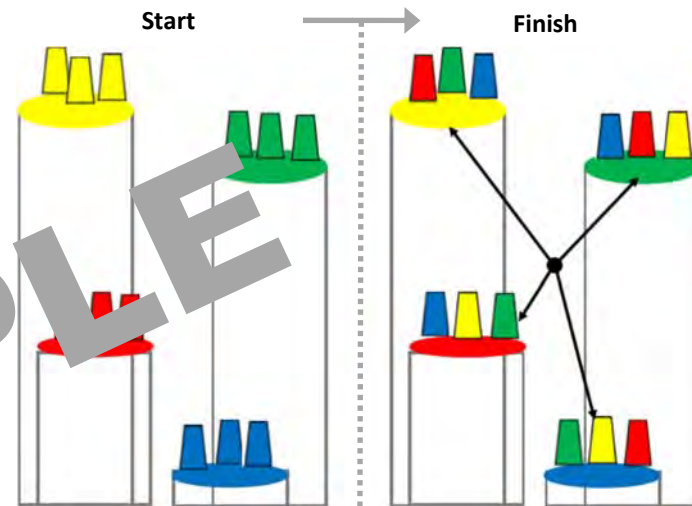
Scrambler

Start: Therapist sets up game by placing colored targets (red, blue, yellow, and green) in locations that challenge balance (high, low, off to the side, etc.). Colored items (cones &/or rings) are placed on their respective, matching targets.

Instructions: Patient “scrambles” the items by mixing and placing them on non-matching targets, e.g., no two items match, nor do they match the color of the target on which they are placed. For example on the yellow target, there is one blue, green, and red item; but no yellow one. To help make room for items during the game, a flat surface (counter, table, etc.) can be used to stage items.

Finish: Game ends when all non-matching items are correctly placed on non-matching targets, or stopped early if patient is unable to remain steady at least 20% of exercise time.

Benefit: Add visual discernment and pattern recognition challenges to reaching/balancing tasks



Scrambler Example With ADL Balance Dots

Exercise 91

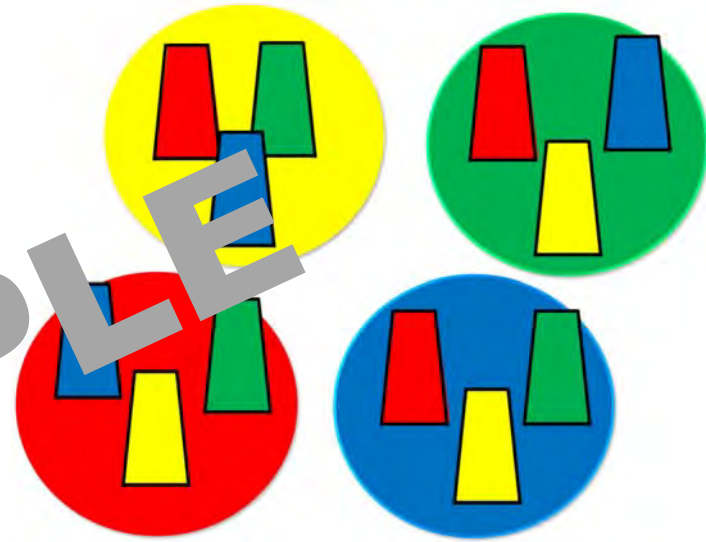
Match Maker

Start: Therapist sets up game by placing colored targets (red, blue, yellow, and green) in locations that challenge balance (high, low, off to the side, etc.). Colored cones, rings, and diagram to be “matched” are placed on flat surface (table, raised mat, shelf, etc.) in front of patient.

Instructions: Using a diagram as a guide, the patient selects and places items on respective targets. Items shown on diagram are placed on targets. It is possible all available items will not be used. At end of game the items that are not used will remain on flat surface in front of patient.

Finish: Game ends when all items are correctly placed on targets matching the diagram presented, or stopped early if patient is unable to remain steady at least 20% of exercise time.

Benefit: Add visual discernment and pattern recognition challenges to reaching/balancing tasks



Example Match Maker Diagram With ADL Balance Dots

Exercise 94

Simon—Lower Extremity

Start: Simon is played with colored targets only. Therapist sets up game by placing colored targets (red, blue, yellow, and green) in locations that challenge stepping balance.

Instructions: Patient steps on the target color called out by the therapist: red, yellow, blue or green. Upon successful completion of task, the therapist adds a new color. This sequence is repeated, building a progressively longer color sequence. The patient's goal is to remember and repeat the color sequence by stepping on the target in the correct order. The therapist continues to add colors until the patient is unable to repeat the color chain in the correct order.

Finish: Game ends when patient is unable to repeat the color sequence in the correct order, or stopped early if patient is unable to remember the sequence at least 20% of exercise time.

Benefit: Add visual discernment and memory challenges to stepping/balancing tasks



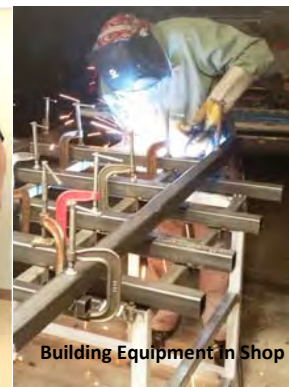
**Patient steps
on color in
sequence**

To read the full *Balance Games* section, please visit www.ADLbalance.com and purchase book.

SAMPLE

About the Author

Shane Haas, PT, MSIE, CPE has 20+ years experience in the clinic and particularly enjoys helping patients with balance problems. He currently treats in the outpatient dept. at the New Braunfels Regional Rehabilitation Hospital in New Braunfels, TX. Shane's wife, Leigh, is an OT and together they have created numerous innovations in balance rehabilitation, including the ADL Balance Trainer, ADL Reach Trainer, ADL Balance Mat, ADL Rumble Board, ADL Hip Stick, ADL Quadrant Hurdle, and more. Shane authors the *ADL Balance Blog* and teaches *Haas Balance Training: 100+ Exercises for PTs and OTs* nationally. A '96 graduate of the Physical Therapy program at the University of Florida, he moved to Texas Tech (Master's degree in Industrial Engineering in '02) and earned a Board Certification as a Professional Ergonomist from the B.C.P.E. Shane & Leigh founded ADL 365 Inc. to help bring better balance training tools and techniques into the world. Stay tuned to ADL 365 Inc. for more innovations to come in the area of balance training and fall prevention.



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