

Appendix A: Summary of Interventions

Acronyms and Abbreviations: **CDP:** Computerized Dynamic Posturography; **COG:** Center of Gravity, **LOS:** Limits of Stability, **ADT:** Adaptation Test, **MCT:** Motor Control Test, **SOT:** Sensory Organization Test, **STS:** Sit to Stand, **VOR:** Vestibulo-ocular Reflex

Session #	Training Focus	CDP	Overground	Home Exercise Program
1	<ul style="list-style-type: none"> • Maintaining neutral COG alignment • Increasing limits of stability in the direction of impairment • Improving translation of COG during functional activity 	<p>Tasks: Align center, center-anterior, center right posterior, left lateral-right lateral</p> <p>Pacing: 4 seconds</p> <p>Scene: blank, white wall</p> <p>LOS: 40–50%</p> <p>Trials: 10 trials, 1 minute each</p>	<ul style="list-style-type: none"> • Sit-to-stands (STS) three sets of five • Lateral weight shifts in parallel bars • Anterior weight shifts in parallel bars • Posterior and rightward weight shifts in parallel bars 	<ul style="list-style-type: none"> • STS three sets of five daily.
2	<ul style="list-style-type: none"> • Maintaining neutral COG with unreliable somatosensory input • Increasing limits of stability in the direction of impairment • Decreasing trunk motion with weight shifts 	<p>Tasks: Align center with sway gain*: 0, .75, -0.5 Center posterior, left lateral-right lateral, center right posterior no sway</p> <p>Pacing: 4 seconds</p> <p>Scene: blank, white wall</p> <p>LOS: 40–50%</p> <p>Trials: 11 trials, 1 minute each</p>	<ul style="list-style-type: none"> • Lateral weight shifts in parallel bars using mirror • Right posterior weight shift in parallel bars • Focused on weight shifting without trunk flexion • Used dycem under right foot as feedback to keep toes planted 	<p>Add:</p> <ul style="list-style-type: none"> • Core-stability exercises in supine • Standing weight shifts beside kitchen island (lateral, anterior, right posterior directions) x 2 minutes each
3	<ul style="list-style-type: none"> • Improving postural control with unreliable somatosensory input 	<p>Tasks: Align center with sway gain: 0, +0.25, -0.25 Circle left no sway gain</p> <p>Pacing: 4 seconds</p>	<ul style="list-style-type: none"> • Standing on foam pad, COG shifts in three directions (side-to-side, 	No revisions

		Scene: blank, white wall LOS: 50% Trials: seven trials, 1 minute each Perturbation Training: ADT x 1	forward, back-right) for 2 minutes each	
4	<ul style="list-style-type: none"> Improving automatic postural control Maintaining neutral COG with unreliable somatosensory input Improving use of core-stabilization strategies in standing 	Tasks: Align center with sway gain: 0, 0.25, -0.25 Pacing: not applicable Scene: blank, white wall LOS: N/A Trials: six trials, 1 minute each Perturbation training: ADT x 2	<ul style="list-style-type: none"> Neuromuscular re-education: Tactile feedback at bilateral anterior superior iliac spines to guide COG forward Tactile feedback at bilateral gluteals to guide COG backward Core stabilization exercises in standing 	No revisions
5	<ul style="list-style-type: none"> Improving postural control with increasingly unreliable somatosensory input Integrating postural control strategies with gait and other functional activities Maintaining postural control with dual tasking 	Tasks: Align center with sway gain: 0, +0.25, -0.25, 0.50 Pacing: not applicable Scene: blank, white wall LOS: not applicable Trials: four trials, 1 minute each	<ul style="list-style-type: none"> Gait training 	Add: Ball toss in corner x 3 minutes while listening to music.
6	<ul style="list-style-type: none"> Improving automatic postural control 	Tasks: Virtual reality – visual flow training Scene: Park	No overground training due to time constraints	No changes

	<ul style="list-style-type: none"> Improving sensory integration 	<p> Scene movement: slow, medium Central density: high Peripheral density: high Obstacles: off Distraction frequency: off Cognitive load: off, medium Lighting: daylight COG guides: on Trials: 12 trials, 1 minute each Perturbation training: ADT x 2 MCT x 2 </p>		
7	<ul style="list-style-type: none"> Improving postural control under complex visual conditions Improving postural control with obstacle negotiation 	<p> Tasks: Virtual reality – visual flow training Scene: Park Scene movement: slow, medium Central density: high Peripheral density: low Obstacles: dynamic Distraction frequency: high Cognitive load: off Lighting: daylight COG guides: on </p>	<ul style="list-style-type: none"> Lateral weight shifts Posterior and rightward weight shifts 	No revisions

		Trials: seven trials, 1–2 minutes each		
8	<ul style="list-style-type: none"> Improving automatic postural control Increasing limits of stability in the direction of impairments Improving postural control under complex visual conditions 	Tasks: Align center, center-anterior, center right posterior, left lateral-right lateral Scene: checkered room Trials: four trials, 1 minute each Perturbation training: MCT x 2	<ul style="list-style-type: none"> Gait training 	No revisions
9	<ul style="list-style-type: none"> Improving sensory integration Improving postural control under complex visual conditions Maintaining postural control with dual tasking Improving eye-head coordination for stability of visual scene 	Tasks: Virtual reality – visual flow training Scene: Park Scene movement: slow, medium Central density: high Peripheral density: low Obstacles: dynamic Distraction frequency: high Cognitive load: on Lighting: daylight COG guides: on Trials: seven trials, 1–2 minutes each	<ul style="list-style-type: none"> Review of all Home Exercises 	Add: <ul style="list-style-type: none"> VOR X 1 exercises and saccade exercises in the seated position.

*Gain refers to the movement of the image (camera gain) or platform movement (sway gain) in response to an individual's postural sway. When the sway-referencing is set to 1.0, the movement of the scene or force plate matches the patient's sway exactly, distorting the sensory input in a 1:1 ratio. When set to 0.0, the sensory environment remains stationary, leaving the somatosensory input intact. A sway gain set to -1.0 results in a platform tilt equal and opposite in direction of the patient's sway.