

Parkinson Disease Balance Training

Produced by: Parkinson Disease Knowledge Translation Task Force

Fact Sheet

Physical therapists should implement balance training intervention programs to reduce postural control impairments, and improve balance and gait outcomes, mobility, balance confidence, and quality of life in individuals with Parkinson disease.

Types individuals with PD who would most/least benefit from the intervention:

- Persons with idiopathic PD H&Y stage 1-4 who are ambulatory.

How to perform balance training:

1. The type intervention, dosage, and intensity varied greatly in these studies.
2. Dosage: Balance should be addressed for the length of the PT plan of care as well as in perpetuity as part of a regular exercise routine outside of therapeutic interventions.
3. If treadmills are not available, such as in the hospital or home setting, consider the use of gait belts and assistive devices as needed to perform moderate to vigorous intensity gait training to improve balance. For other recommendations about gait training, please see gait training KT documents.

Type of Balance Training	What Does it Improve?	Frequency, Intensity, Time, Type – Volume and Progression (FITT-VP)	Tools for Assessment
Multi-modal balance training compared to usual care, gentle exercise, or no intervention.	Mobility, gait, and balance confidence. May reduce falls in those with mild PD and may address non-motor symptoms.	Frequency: 2 to 3 times per week, for at least 5 and up to 10 weeks for Time: 30-120 minutes/session Volume = 16 to 30 total hours	Functional Gait Assessment, Freezing of Gait Questionnaire, Activities-Specific Balance Confidence Scale, Parkinson's Disease Questionnaire-39, fall rate and Geriatric Depression scale.
Balance with dynamic gait training on a treadmill at moderate to vigorous aerobic training.	Treadmill training may be better for dynamic balance during gait than balance training alone.	Frequency: 2x/week of Intensity: moderate to high Time: 20-40 min.	Gait speed, Timed Up and Go, gait parameters, sway area.
Balance with technology such as sensors and biofeedback, force plates with and without visual feedback and exergaming.	The addition of technology improves mobility, stability, balance confidence, fall risk, depression, and QOL	Frequency: 2-3x/week for 5-8 weeks Time: 30-50 minutes. Type: Sessions were often combined with gait activities or other forms of traditional PT interventions.	Berg Balance Scale, 10 Meter Walk Test, Activities-specific Balance Confidence Scale, Falls Efficacy Scale, Parkinson's Disease Questionnaire-39, fall rate, Hospital Anxiety and Depression Scale.



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Type of Balance Training	What Does it Improve?	Frequency, Intensity, Time, Type – Volume and Progression (FITT-VP)	Tools for Assessment
Balance vs resistance training	Balance training is superior to resistance training for improving postural control, balance outcomes, and spatiotemporal gait impairments.		Fullerton Advanced Balance scale, Timed-up-and-go-test, Freezing of Gait, Falls Efficacy Scale, fall rate, single leg stance.
Core strengthening	Physical therapists can include core strengthening as part of their plan of care but it may not be more effective than conventional physical therapy interventions and therefore should not be a priority or occur in isolation from other interventions.		
Aquatics	Aquatic therapy may improve fear of falling and quality of life but is not likely to improve balance outcomes.		

Considerations related to safety:

- Falls are a potential risk with balance exercises but there was no increase in number of adverse events.
- Take appropriate precautions to prevent falls such as the use of gait belts, harness devices, rehab aides, etc.
- Screen for orthostatic hypotension and manage if identified.

Considerations for practice setting:

- Balance training may be more effective when administered under close supervision of a physical therapist.

Considerations for cost, space:

- Balance training provided by a physical therapist, with or without the use of technology can be costly and some situations the cost may be prohibitive.

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