



## **Role of Rehabilitation in Supporting Parkinson's Disease**

**By: Alec Andoyan, PT, DPT**

### **Occupational Therapy (OT)**

OT focuses on optimizing functional independence and quality of life by addressing:

- ADL and IADL performance (dressing, feeding, handwriting)
- Energy conservation and fatigue management
- Cognitive strategies and compensatory techniques
- Environmental modifications and adaptive equipment
- Fine motor coordination and upper extremity function

### **Physical Therapy (PT)**

PT addresses mobility, balance, and movement efficiency, including:

- Gait training and postural correction
- Balance and fall prevention
- Strength, flexibility, and endurance training
- Amplitude-based interventions (e.g., LSVT BIG)
- Cueing strategies (visual, auditory, tactile)

### **Speech-Language Pathology (SLP)**

SLP targets communication and swallowing impairments, including:

- Hypokinetic dysarthria (reduced vocal loudness)
- Voice and speech intelligibility (e.g., LSVT LOUD)
- Cognitive-communication strategies
- Dysphagia management and aspiration prevention

### **Evaluation**

#### **OT**

- ADL/IADL assessments
- Upper extremity coordination and dexterity
- Cognitive screening
- Home safety evaluation
- Common outcome measures used:
  - Canadian Occupational Performance Measure (COPM) – self-perceived task performance & satisfaction.
  - Parkinson's Disease Activities of Daily Living Scale (PADLS) – PD-specific ADL disability severity.
  - University of California San Diego Performance-Based Skills Assessment (UPSA) – cognitively demanding everyday skills.



- 9-Hole Peg Test – fine motor/dexterity speed.
- Nottingham Extended Activities of Daily Living (NEADL) – extended instrumental ADL functioning.
- Parkinson's Disease Questionnaire-39 (PDQ-39) – PD quality-of-life self-report.

## PT

- Gait analysis and balance testing
- Strength, ROM, and posture assessment
- Fall history and functional mobility
- Freezing of gait assessment
- Common outcome measures used:
  - MDS-Unified Parkinson's Disease Rating Scale (MDS-UPDRS) – global motor and non-motor severity.
  - Hoehn & Yahr Scale – PD stage of disease progression.
  - Timed Up and Go (TUG) – mobility and fall-risk timing.
  - Berg Balance Scale (BBS) – static/dynamic balance ability.
  - Mini-Balance Evaluation Systems Test (Mini-BESTest) – dynamic balance control.
  - 10-Meter Walk Test (10MWT) – gait speed measure.
  - 6-Minute Walk Test (6MWT) – endurance walking distance.
  - Freezing of Gait Questionnaire (FOG-Q) – freezing severity measure.
  - Activities-Specific Balance Confidence (ABC) Scale – self-reported balance confidence.

## SLP

- Speech intelligibility and voice loudness
- Swallowing assessment (clinical and instrumental)
- Cognitive-linguistic evaluation
- Patient-reported communication challenges
- Common outcome measures used:
  - Voice Handicap Index (VHI) – subjective voice disorder impact.
  - Speech Intelligibility Test – clarity of spoken communication.
  - Diadochokinetic (DDK) Rates – rapid syllable repetition speech motor control.
  - Eating Assessment Tool-10 (EAT-10) – patient-reported swallowing difficulty.
  - SWAL-QOL – swallowing-related quality of life.
  - Parkinson's Disease Questionnaire-39 (PDQ-39) – includes communication/swallow impact.
  - Observer-rated Dysphagia Tests (e.g., MASA) – structured swallow assessment (clinical/bedside).



## **Common Interventions and Emphasis of Treatment**

### **PT**

Beyond general exercise and gait training, PT treatment for PD should include:

- Amplitude-based training – exaggerated movement patterns to counter bradykinesia (e.g., BIG-style principles).
- External cueing strategies – auditory (metronome), visual (floor markers), and tactile cues to improve gait initiation and reduce freezing.
- Dual-task training – improving motor performance under cognitive load to reduce fall risk.
- Postural re-education – addressing stooped posture, axial rigidity, and thoracic mobility.
- Reactive balance training – perturbation-based training to improve postural responses.
- Aerobic conditioning – moderate–high intensity exercise (treadmill, cycling) to support neuroplasticity.
- Freezing of gait management – task-specific strategies, turning practice, and cueing techniques.
- Fall prevention education – risk awareness, home safety strategies, and movement planning.
- Stage-specific programming – adapting intensity and goals based on Hoehn & Yahr stage.
- Caregiver training – safe mobility assistance and cueing techniques.

### **OT**

OT treatment emphasizes functional independence, efficiency, and quality of life, including:

- Task-specific ADL retraining – dressing, feeding, grooming using PD-adapted strategies.
- Energy conservation techniques – pacing, rest breaks, and task simplification.
- Adaptive equipment & environmental modification – utensils, seating, bathroom safety, home setup.
- Fine motor and handwriting interventions – addressing micrographia and dexterity decline.
- Cognitive strategy training – compensatory techniques for attention, sequencing, and executive function.
- Visual cueing for task initiation – external prompts to overcome freezing during ADLs.
- Fatigue management – activity scheduling and prioritization.
- Driving and community mobility assessment – safety, reaction time, and planning strategies.
- Caregiver education – support strategies and graded assistance.
- Psychosocial support – addressing role changes and participation restrictions.

### **SLP**

SLP interventions target communication, voice, cognition, and swallowing, including:



- Voice therapy – increasing vocal loudness and respiratory support (LOUD-based principles).
- Speech intelligibility training – articulation, rate control, and prosody strategies.
- Cognitive-communication interventions – attention, memory, and executive function strategies.
- Swallowing therapy – compensatory techniques, posture adjustments, and diet modification.
- Respiratory-phonatory coordination – improving breath support for speech.
- Communication partner training – educating caregivers on effective communication strategies.
- Augmentative communication strategies – low- or high-tech supports as disease progresses.
- Education on aspiration risk – signs, symptoms, and prevention strategies.
- Stage-specific intervention planning – adjusting goals as PD progresses.
- Quality-of-life focused care – patient-centered communication goals.

### **Interdisciplinary & Medical Coordination**

- Collaboration with neurology regarding medication timing (“ON/OFF” periods)
- Exercise timing relative to dopaminergic medication
- Patient education on medication-exercise interactions
- Referral to support groups and community exercise programs

### **Helpful Resources**

#### Websites

- [Parkinson’s Foundation](#)
- [Michael J. Fox Foundation for Clinical Research](#)
- [Parkinson’s Foundation of the Nation Capital Area](#)
- American Parkinson Disease Association ([APDA](#))

#### Apps

- Parkinson’s ON/OFF [Tracker](#)
- Medisafe for [medication reminders](#)
- PD Warrior Plus Home Exercise Programs - [paid program](#)

#### YouTube / Video Resources

- LSVT Global [YouTube Channel](#)
- Parkinson’s Foundation [YouTube Channel](#)
- American Parkinson’s Disease Association [YouTube Channel](#)

### **References**

1. American Institutes for Research. (n.d.). Rehabilitation Measures Database (RehabMeasures).
2. American Physical Therapy Association. (n.d.). Physical therapy guide to Parkinson disease.
3. American Speech-Language-Hearing Association. (n.d.). Parkinson’s disease practice portal.



4. Belafsky, P. C., Mouadeb, D. A., Rees, C. J., Pryor, J. C., Postma, G. N., Allen, J., & Leonard, R. J. (2008). Validity and reliability of the Eating Assessment Tool (EAT-10). *Annals of Otolaryngology, Rhinology & Laryngology*, 117(12), 919–924.
5. Berg, K., Wood-Dauphinee, S., Williams, J. I., & Maki, B. (1992). Measuring balance in the elderly: Validation of an instrument. *Physiotherapy Canada*, 44(2), 49–54.
6. Bohannon, R. W., & Williams Andrews, A. (2011). Normal walking speed: A descriptive meta-analysis. *Physiotherapy*, 97(3), 182–189.
7. Goetz, C. G., Tilley, B. C., Shaftman, S. R., et al. (2008). Movement Disorder Society–sponsored revision of the Unified Parkinson’s Disease Rating Scale (MDS-UPDRS): Scale presentation and clinimetric testing results. *Movement Disorders*, 23(15), 2129–2170.
8. Hoehn, M. M., & Yahr, M. D. (1967). Parkinsonism: Onset, progression, and mortality. *Neurology*, 17(5), 427–442.
9. Jacobson, B. H., Johnson, A., Grywalski, C., et al. (1997). The Voice Handicap Index (VHI): Development and validation. *American Journal of Speech-Language Pathology*, 6(3), 66–70.
10. Jankovic, J. (2008). Parkinson’s disease: Clinical features and diagnosis. *Journal of Neurology, Neurosurgery & Psychiatry*, 79(4), 368–376.
11. Kalia, L. V., & Lang, A. E. (2015). Parkinson’s disease. *The Lancet*, 386(9996), 896–912.
12. King, L. A., & Horak, F. B. (2013). On the Mini-BESTest: Scoring and reliability in Parkinson disease. *Physical Therapy*, 93(4), 571–581.
13. Law, M., Baptiste, S., McColl, M., Opzoomer, A., Polatajko, H., & Pollock, N. (1990). The Canadian Occupational Performance Measure: An outcome measure for occupational therapy. *Canadian Journal of Occupational Therapy*, 57(2), 82–87.
14. Mann, G., Hankey, G. J., & Cameron, D. (1999). Swallowing disorders following stroke and neurological disease. *Dysphagia*, 14(2), 84–94.
15. McHorney, C. A., Bricker, D. E., Kramer, A. E., et al. (2002). The SWAL-QOL outcomes tool for oropharyngeal dysphagia. *Dysphagia*, 17(2), 97–114.
16. Morris, S., Morris, M. E., & Iansek, R. (2001). Reliability of measurements obtained with the Timed “Up & Go” test in people with Parkinson disease. *Physical Therapy*, 81(2), 810–818.
17. Nieuwboer, A., Rochester, L., Herman, T., et al. (2009). Reliability of the Freezing of Gait Questionnaire in Parkinson’s disease. *Movement Disorders*, 24(9), 1309–1314.
18. Parkinson’s Foundation. (n.d.). Understanding Parkinson’s disease.
19. Peto, V., Jenkinson, C., Fitzpatrick, R., & Greenhall, R. (1995). The development and validation of a short measure of functioning and well-being for individuals with Parkinson’s disease. *Quality of Life Research*, 4(3), 241–248.
20. Platz, T., Brown, R. G., Marsden, C. D., et al. (1989). Motor execution and timing in Parkinson’s disease. *Brain*, 112(3), 639–658.
21. Podsiadlo, D., & Richardson, S. (1991). The Timed “Up & Go”: A test of basic functional mobility for frail elderly persons. *Journal of the American Geriatrics Society*, 39(2), 142–148.
22. Steffen, T., Seney, M., & McNeely, M. (2015). Mini-BESTest, Berg Balance Scale, and Timed Up and Go test in people with Parkinson disease: Responsiveness and MCID. *Journal of Neurologic Physical Therapy*, 39(3), 119–128.
23. Tomlinson, C. L., Patel, S., Meek, C., et al. (2012). Physiotherapy intervention in Parkinson’s disease: Systematic review and meta-analysis. *BMJ*, 345, e5004.
24. Yorkston, K. M., Beukelman, D. R., Strand, E. A., & Bell, K. R. (1999). Management of motor speech disorders in children and adults (2nd ed.). Pro-Ed.