

Step it up for Parkinson's: The first Step: Evidence

Half of a million people in the United States have Parkinson's Disease (1) Therefore therapists must have the skills and evidence to treat this burgeoning segment of our population. There are so many approaches to Parkinson's Disease (PD) cited in the literature, that we will be dividing the intervention articles into 4 categories: General, resistance training, gait and balance, axial mobility.

This article will discuss some general evidence based treatment ideas. One of the first published treatment interventions was the Flewitt Hanford exercises. (2) Below is a quick description of these. Keep in mind that these techniques are not evidence based but were the first to be used and do have a good philosophical basis.

Flewitt Hanford Exercises for Parkinson's

1. Long sitting. Alternate flexion/ extension of toes, feet and knees
2. Crooklying . Rocking knees side to side
3. Lying. Alternate hip and knee flexion/ extension
4. Standing- High stepping, alternate foot dorsiflexion, standing still grapevine

Breathing is an important aspect of rehabilitation for patients with PD. Haas showed in patients with mild to moderate PD there is a significant weakness of the respiratory muscles. This can affect the person during exercise but has minimal effect on ADL. (3) Comella demonstrated that physical disability in moderately advanced PD objectively improves with a regular physical rehabilitation program. This program was a 12 week intervention that consisted of a warm-up (5 min); stretching 15 min; strengthening-15 min; functional training -15 min; gait training on treadmill- 15 min; balance training 15 min; relaxation- 10 minutes. (4)

Another important area is the trunk and Bridgewater showed that people with PD exhibit less axial range of motion and isometric torque. This study suggests the importance of initiating a strengthening program early to delay the decline in function. (5) Villani also looked at an evidence based program to help patients with PD straighten up and showed significant improvement in just 5 weeks with a twice a week program in the following:

Supine to sit
Sit to supine
Supine rolling
Sit to stand (6)

Giladi looked at the common problem of freezing and described it as start hesitation and blocks in the middle of motion, in turns, in approaching obstacles, and in narrow spaces. He found it

was associated with progression of disease and vascular parkinsonism and normal pressure hydrocephalus. He also suggested additional Parkinson's Rx Ideas as follows:

Tremor- Press affected elbow against the body to stabilize the upper arm to assist in doing ADL. This makes a smaller lever arm and results in less tremor.

Freezing-

- Place heels on floor
- Straighten trunk, hips, knees
- Rock side to side
- March in place
- Step forward leading with the heels
- Keep feet 8" apart
- Don't lean backwards (7)

Two alternative treatment techniques with evidence for patients with PD are Trager and The Alexander Technique. A study by Duval showed the level of evoked stretch response was reduced 36% immediately after a Trager session and remained 32% lower than pretest values 11 minutes after when retested.

The Trager technique can be described as a gentle rhythmic rocking 1-4cm in amplitude done to 1-2 joints at a time (8). This can help our patients who have severe tone, tightness and rigidity. Stallibass explored 24 lessons of the Alexander Technique and found that it led to sustained benefit in patients with PD. This technique uses skilled hand contact to observe and assess changes in muscle activity, balance and co-ordination resulting from mental activity and provides immediate feedback. Participants learn to recognize & adopt better thinking strategies for control of movement. (9)

Meg Morris published an excellent review article that had some wonderful components for treatment of patient's with PD. (10) Some of these are outlined below:

Find alternative motor strategies

- To improve force and control and reduce co-contraction

- To improve self-initiation

- Improve use of sensory information

Cognitive –Learn how to chew gum and walk

Tai Chi

Improve use of Sensory information

Optimal sensory information

Use variability of practice

Finally, Ellis recently described an inpatient program consisting of PT, OT, SLP for a total of 3 hours 5-7 days /week. See article for details of the program (11).

This program showed significant improvement in FIM scores.

Beginning our quest to "step it up", it is our hope that this article gave some good general evidence based information for treating some common problems in our patients with PD.

References

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