

Background & Objectives

Background: Alexander technique (AT) is a cognitive embodiment approach that combines training in inhibition, body schema, and goal awareness to enhance the performance of daily activity. In-person one-to-one, and group courses have shown benefits for people living with Parkinson's disease that were retained at 6-12 months [1-4]. Inhibitory control is impaired in Parkinson's disease and is correlated with motor dysfunction [5].

Purpose: To test whether a remote-delivery Alexander technique-based course for people living with Parkinson's disease would improve proactive inhibitory control and whether this would correlate with improved functional outcomes.

Participants

16 people living with Parkinson's disease (Hoehn & Yahr stages 1-3) and 12 care partners from North and South Carolina began the course. 14 people living with Parkinson's and 12 care partners completed the course.



Methods

Intervention: 3 online groups met via Zoom

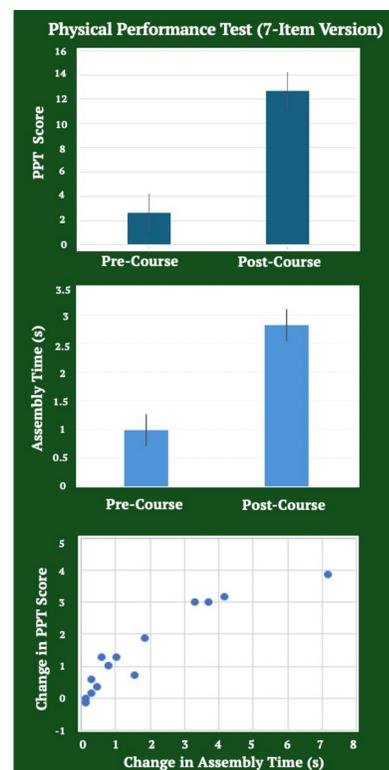
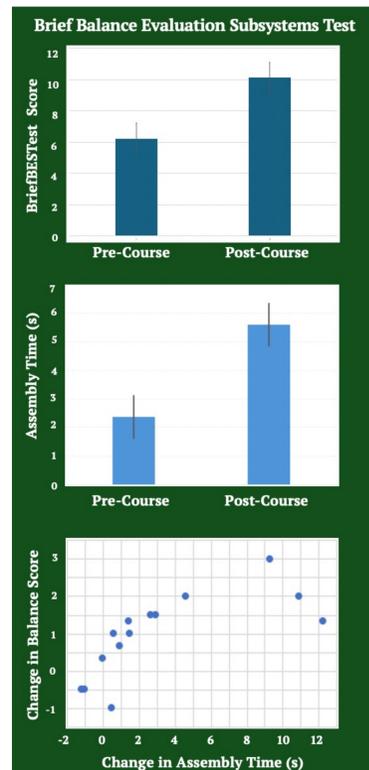
- 90-105 minutes, twice a week for 8-9 weeks

Coursework: Self-management strategies were taught via lecture, demonstration, and activities that embedded Alexander technique principles in everyday acts. Care partners were included to increase learning benefits.

Outcome Measures (assessed via Zoom sessions): Pre-course, post-course, and 6-month follow-up.

- **Balance:** Brief Balance Evaluation Subsystems Test (BriefBESTest)
- **Mobility:** 7-Item Physical Performance Test (PPT)
- **Assembly times:** The interval between the prompt, "Let me know when you are ready," and the subject's verbal "Ready" response.

Results



- Scores improved in both the Brief BESTest ($p=.006$) and the Physical Performance Test ($.001$).
- Assembly times increased 3.2 seconds per task for Brief BESTest ($p=.02$) and 1.8 seconds per task for Physical Performance Test ($p=.005$).
- There was a positive correlation between improved scores and increased assembly times both in the Brief BESTest ($r=.71$, $p=.007$) and the Physical Performance Test ($r=.93$, $p<.00001$), with a ceiling (no further improvement in score) around 7 seconds of assembly time.

Assessments via Zoom



"Alexander technique does not take time, it makes time."



"Taking time. The class taught us that."



In Their Own Words



"Be aware of myself in space. Make sure to take my time, and forgive myself."



"The most important thing was the pausing before you make the move, being careful how you move."

"When you are doing something, have an idea of what you are doing, why you are doing it, the concept of intentionality. This is what I'm intending to do. It's just not happening randomly."



"You expand the time you can control. Things happen and you decline. But it expands the time that you can control stuff or manage stuff. You can be independent for longer."

Conclusions

The strong correlations between longer assembly time and improvements in motor performance found in this study support the hypothesis that pausing to gather oneself rather than launching immediately into activity is a beneficial strategy for people living with Parkinson's disease. These results also suggest that one crucial mechanism by which Alexander technique exerts beneficial effects is by promoting proactive inhibition and motor replanning, perhaps strengthening fronto-striatal circuitry. [6]

References

1. Stallibrass C, Sissons P, Chalmers C (2002). Randomized controlled trial of the Alexander technique for idiopathic Parkinson's disease. *Clinical Rehabilitation*, 16(7):695-708.
2. Stallibrass C, Frank C, Wentworth K (2005). Retention of skills learnt in Alexander technique lessons: 28 people with idiopathic Parkinson's Disease. *Journal of Bodywork and Movement Therapies*, 9:2, p. 150-157.
3. Gross M, Cohen RG, Lazaro S, Basye M, Achabal A, Norcia M (2020). 'Poised for Parkinson's': Retention of benefits from Alexander technique group course for people living with Parkinson's disease. *Archives of Physical Medicine and Rehabilitation* 101 (12), e149.
4. Gross M, Condie C, Grieb J, Cohen R (2022). Poised for Parkinson's: Retention of benefits 6-7 months after Alexander technique synchronous online group course. *Archives of Physical Medicine and Rehabilitation* 103 (12), e150
5. Cohen RG, Klein KA, Nomura M, Fleming M, Mancini M, Giladi N, Nutt JG, Horak FB. (2014) Inhibition, executive function, and freezing of gait. *Journal of Parkinson's Disease*, 4(1):111-22. doi: 10.3233/JPD-130221.
6. Cacciatore TW, Johnson PM, Cohen RG (2020). Potential mechanisms of the Alexander technique: Toward a comprehensive neurophysiological model. *Kinesiology Review* 9 (3), 199-213

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