



Gross Motor Function Improves in Young Children with Spastic Cerebral Palsy After Myofascial Structural Integration Therapy



Elizabeth C. Loi¹, Christina A. Buysse¹, Alexis B. Hansen², Karen S. Price³, Theresa M. Jaramillo⁴, Heidi M. Feldman¹

¹Pediatrics, Stanford University School of Medicine; ²Family Medicine, Providence Milwaukie; ³Rolfing Children; ⁴Physical Therapy and Rehabilitation Science, University of California, San Francisco

Introduction

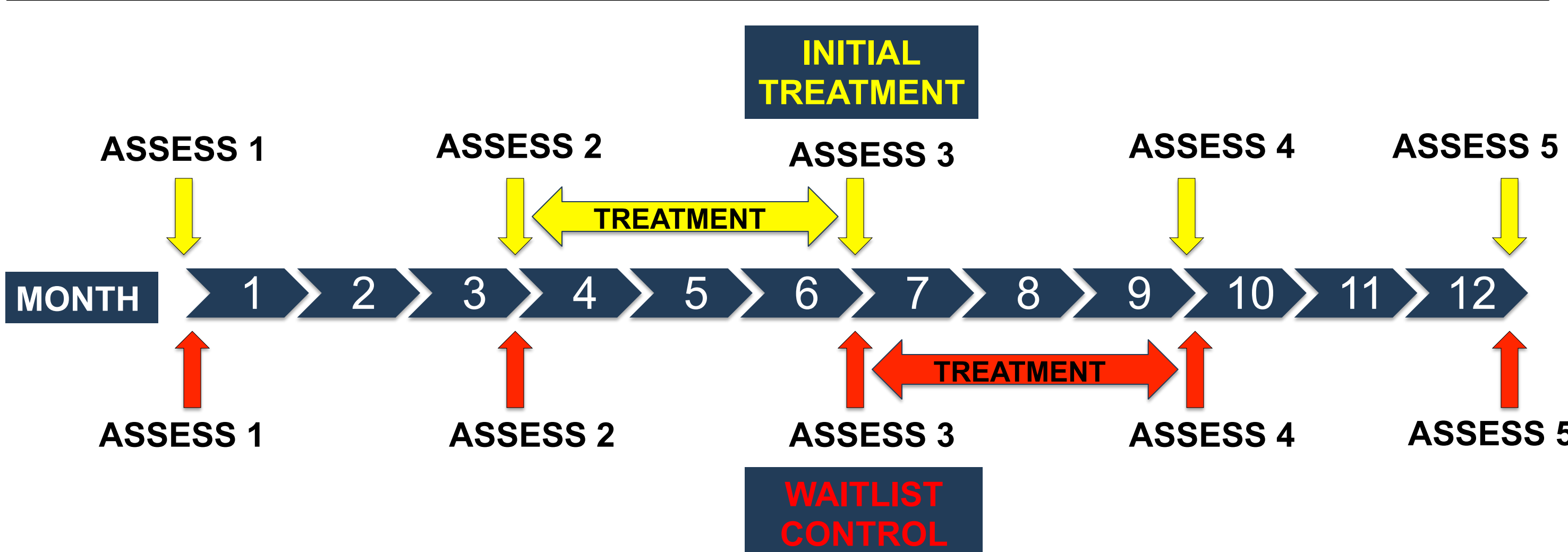
- Cerebral Palsy (CP) is the most prevalent physical disability of childhood.
- Recent research implicates structural changes in the muscle and surrounding connective tissue in maintaining stiffness associated with spastic CP.^{1,2}
- Lifetime prevalence for children with spastic CP to receive massage is 80%; point prevalence is 50%.³
- In prior studies, massage has been shown to improve gross motor and adaptive functions in children with spastic CP.^{4,5}
- Myofascial Structural Integration (MSI) is a deep muscle and soft tissue massage striving to reposition the muscles, bones, and joints.
- It was developed by Ida P. Rolf and is therefore known as Rolfing.

Objective

To assess whether myofascial structural integration, when used as a complementary treatment, improves the gross motor skills of young children with spastic CP

Study Design

- Randomized controlled trial with open label extension
- Initial treatment versus waitlist control group



Treatment

- Ten 75-minute weekly sessions of myofascial structural integration
- One certified practitioner treated all children
- Playful and non-painful approach for children, modified to allow treatment on bed, parent's lap or floor, per child's preference
- Used as complementary treatment, with no change in other therapies and activities



Methods

Participants

	Initial Treatment (n = 8)	Waitlist Control (n = 8)
Mean Age (years)	3.08	2.78
Male, n (%)	3 (37.5)	5 (62.5)
Non-White, n (%)	4 (50.0)	7 (87.5)
Type of Spastic Cerebral Palsy	Hemiplegia = 1 Diplegia = 2 Quadriplegia = 5	Hemiplegia = 3 Diplegia = 1 Quadriplegia = 4
Gross Motor Function Classification System Level	Level 1: n = 2 Level 2: n = 1 Level 3: n = 1 Level 4: n = 4	Level 1: n = 1 Level 2: n = 2 Level 3: n = 0 Level 4: n = 5

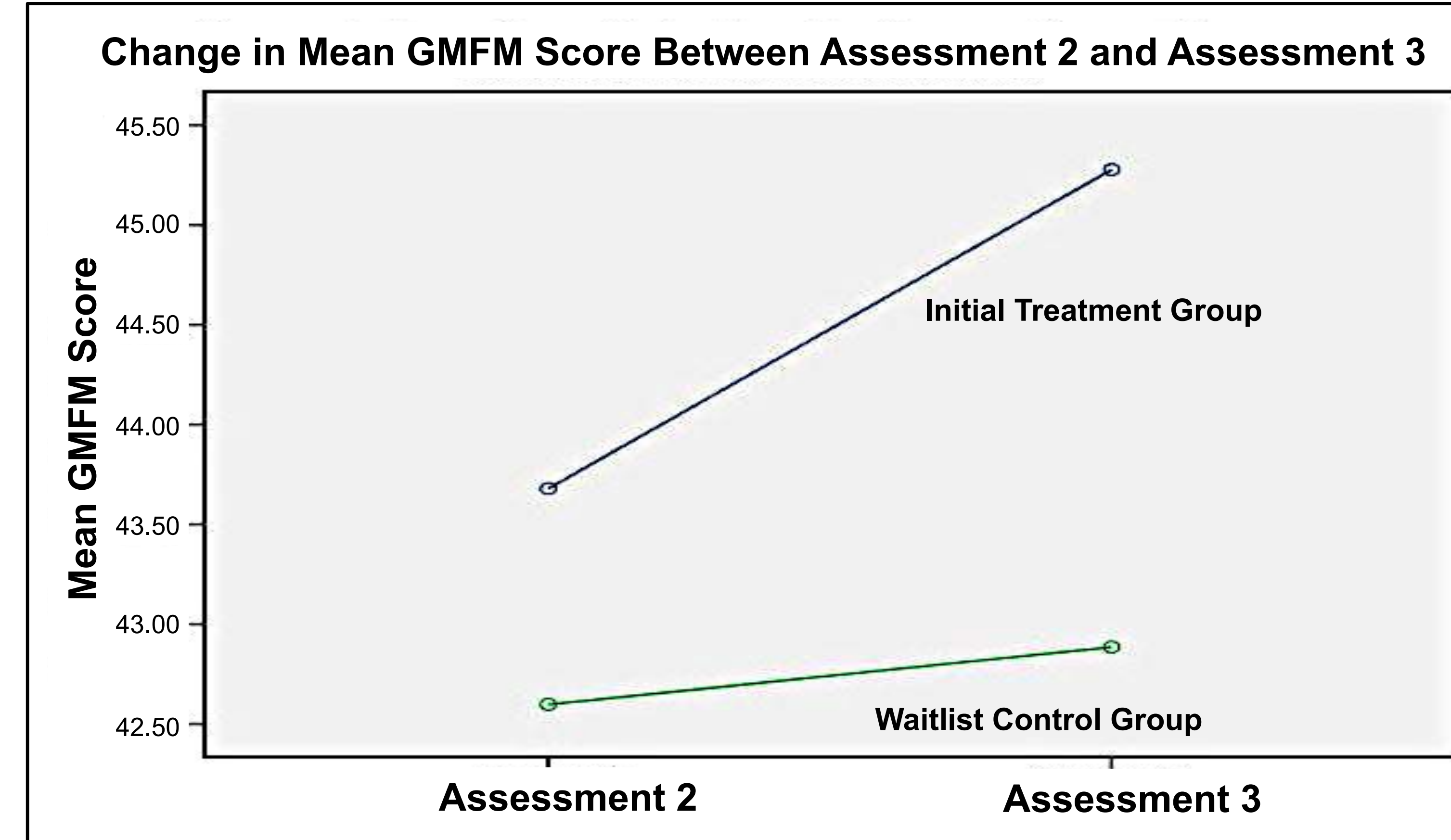
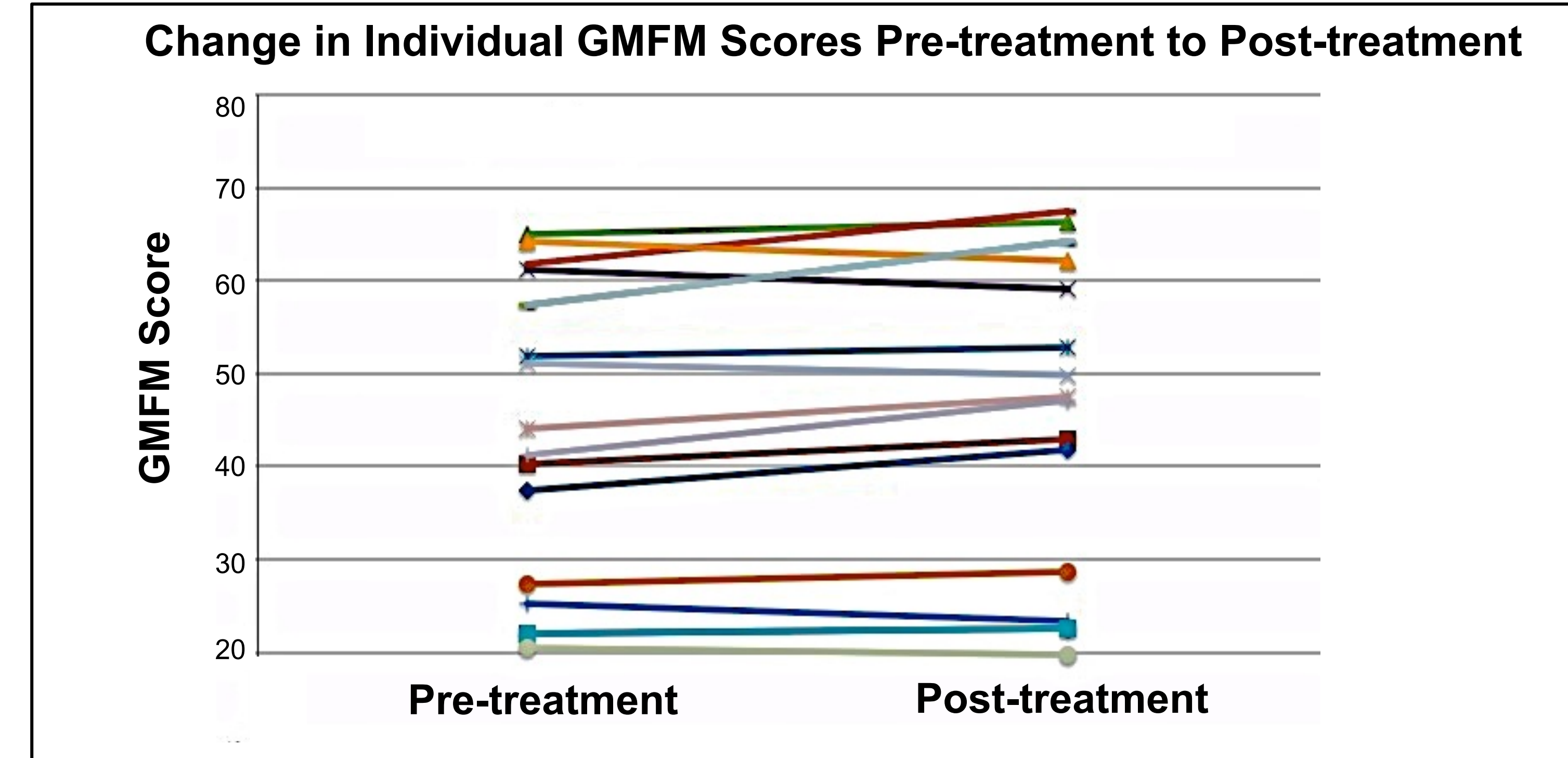
Primary Outcome: Gross Motor Function Measure (GMFM – 66)

- A validated observational measure which assesses gross motor function in children with CP
- One physical therapist unaware of group assignment assessed all children
- 0-3 rating scale for individual items on different skills (e.g. sitting, standing, running)
- 0-100 point scale for the total score
- Higher scores indicates greater function

Data Analyses:

- Paired t-test analysis of the pooled sample was used to examine any differences in GMFM scores among baseline, pre-treatment, and post-treatment GMFM scores.
- Repeated measures ANOVA was used to compare GMFM scores in the initial treatment group to the waitlist control group at Assessment 3.

Results



There was no significant effect of group ($F = .043, p = .84$) or group by time interaction ($F = 1.19, p = .29$). There was a trend for significance for time ($F = 2.5, p = .14$).

Conclusions

- MSI improves gross motor function in young children with spastic CP
- The quantitative change is small, however, it is measurable above and beyond that observed in development over time with standard of care therapies

Acknowledgements

We thank the children and families who participated in this study. We would also like to thank Lynne C. Huffman, Irene M. Loe, Vanessa N. Durand, Katherine E. Travis, and Jenna N. Adams. This work was supported by Gerber Foundation Grant 11PH-010-1210-2936 and MCHB Training Grant T77MC09796.

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