

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

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INTRODUCTION

- Cerebral Palsy (CP) is a non progressive developmental disorder effecting over 2/1000 live births.¹
- Recent research implicates structural changes in the muscle and surrounding connective tissue in maintaining stiffness associated with spastic CP.²
- Previous studies have shown improvements in gross motor and behavioral parameters after various massage therapies.^{3,4}
- One study showed that at any point in time, 51% of children with CP are receiving massage as a therapeutic intervention.⁵
- Myofascial structural integration (MSI), often known as Rolfing, is a deep massage striving to align the body through targeting the fascial layer.

PURPOSE

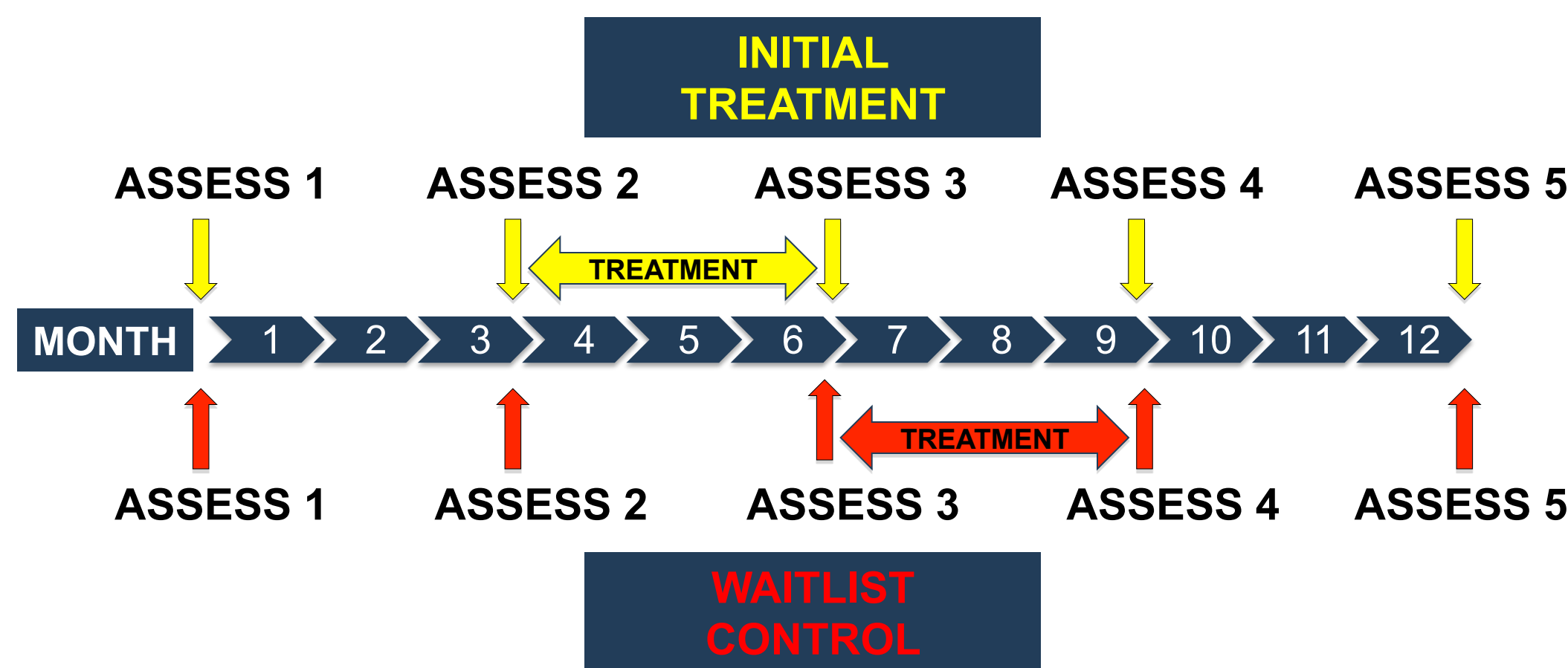
To assess whether myofascial structural integration, when used as a complementary treatment, improves the gross motor skills of young children with spastic CP.

HYPOTHESIS

Children with spastic CP will demonstrate greater gross motor function gains after MSI treatment compared to traditional therapy.

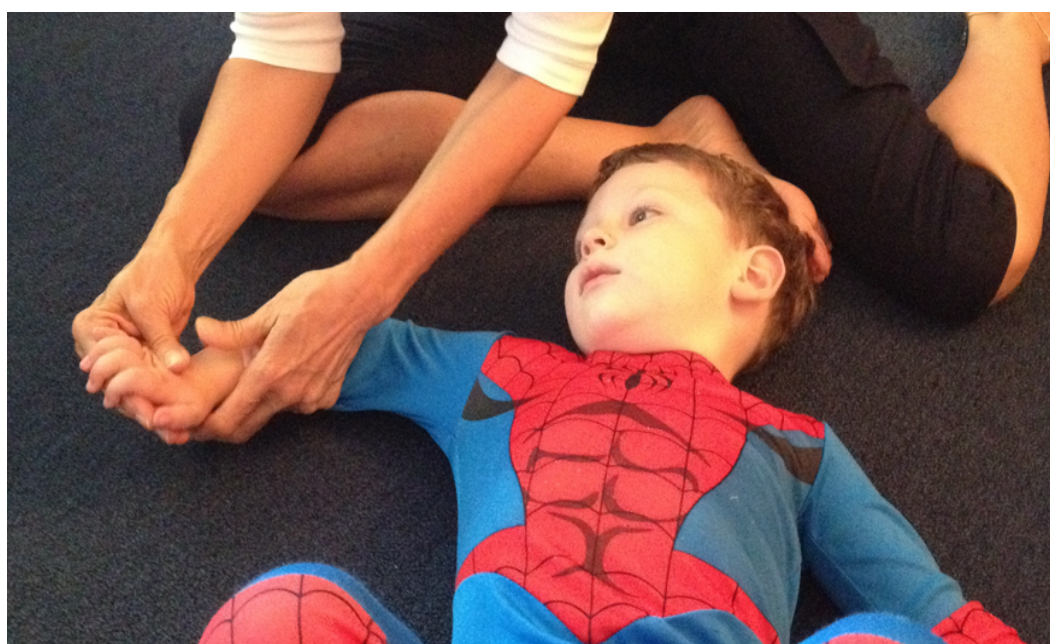
METHODS

Study Design: Cross-over design



Treatment:

- Ten 75-minute weekly sessions of MSI over 12 weeks.
- One certified practitioner treated all children.
- Used as complementary treatment, with no change in other therapies and activities.



Participants:

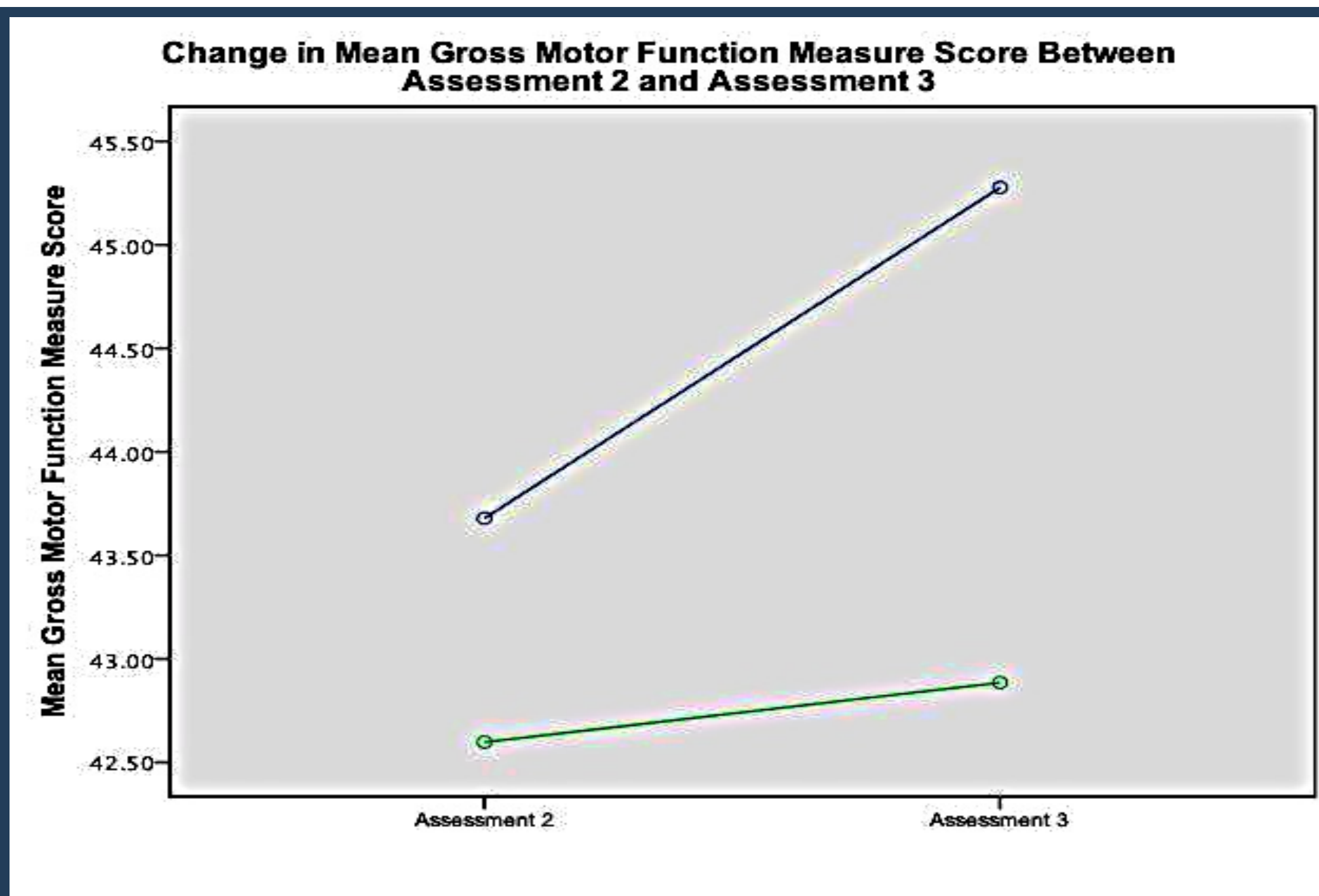
	Initial Treatment (n=8)	Waitlist Control (n=8)
Mean Age (years)	3.08	2.78
Type of Spastic Cerebral Palsy	Hemiplegia=1 Diplegia=2 Quadriplegia=5	Hemiplegia=3 Diplegia=1 Quadriplegia=4
Gross Motor Function Classification System Level	Level 1: n=2 Level 2: n=1 Level 3: n=1 Level 4: n=4	Level 1: n=1 Level 2: n=2 Level 3: n=0 Level 4: n=5

Primary Outcome:

- Gross Motor Function Measure (GMFM-66)
- 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.

RESULTS

	Pooled Sample (n=16) Mean GMFM Change (sd)	t	p
GMFM Change Baseline to Pre-treatment	1.33 (3.68)	1.44	.169
GMFM Change Pre- to Post-treatment	1.62 (2.98)	2.17	.046



ADDITIONAL RESEARCH

- 89 pediatric therapists responded to a survey on the use of soft tissue techniques in the pediatric population.
- 12% have a certification for their soft tissue skill.
- 60% know about Rolfing, 43% have had Rolfing done on themselves, 29% feel it is very effective, yet 0% would be comfortable explaining it to a patient or using it in patient care.
- 39% have referred their patients/clients out for soft tissue work but none have referred to a Rolfer.

Similar to Rolfing	Different from Rolfing
43% use soft tissue techniques to address whole body impairments	55% use soft tissue techniques to address local tissue impairments
37% focus on the fascial level	44% focus on the muscular level only 36% focus on all levels
60% do not use a medium	40% use oil or gel

DISCUSSION & CONCLUSIONS

- Young children with spastic CP who received MSI improved in their gross motor function.
- The quantitative change is small; however, it trends in a positive direction. This small change shows that participants who received MSI and traditional therapy had greater gross motor improvements than those receiving traditional therapy alone.
- Soft tissue techniques are being used by physical therapists in the pediatric population; however, training on these techniques is limited.
- Many of the MSI techniques used in this study are not currently being used in practice and have the potential to improve motor and functional outcomes for children with CP.

ACKNOWLEDGEMENTS

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