Cerebral Palsy (CP)  
**Definition** 
- Most common physical disability in childhood 
- Affects 2-4 children/1000 ages 0-4 years 
- Follows injury to the fetal or infant brain 
- Permanent, non-progressive neurological condition
- Peripheral effects of damage (i.e. spasticity) change as child grows
- Severity of CP classified using the Gross Motor Function Classification System (GMFCS) 
  - Level I: independence; Level V: total dependence

Current treatments focus on reducing spasticity & improving function

Myofascial Structural Integration (MSI)  
**Definition**  
- Specific manipulation technique developed by Rolf Institute 
- Focuses on putting body into alignment with the gravitational field 
- Anatomically correct position
- Braces

Recent research shows local changes in muscles and fascia in CP
- May contribute to pathogenesis and maintenance of spasticity
- Preliminary studies and clinical observations suggest that anatomical and physiological changes are occurring during treatment of patients with CP.

**Characteristics:**
- There are few rigorous evaluations of such methods
- 10 sessions
- May contribute to pathogenesis and maintenance of spasticity
- Peripheral effects of damage (i.e. spasticity) change as child grows
- Most common physical disability in childhood
- Enhanced function occurs as a result of myofascial integration

**Protocol:**
- 40 sessions
- Therapist works on a different anatomical area each session to systematically realign the entire body 
- Each session is approximately one hour

**Myofascial Treatment for Children With Cerebral Palsy: A Pilot Study of a Novel Therapy**  

**OBJECTIVE**  
This study evaluates the therapeutic potential of Myofascial Structural Integration, a novel and safe technique of muscle and soft tissue manipulation, as a complementary treatment for children with spastic CP.

**METHODS**  
**Participants**
- Study participants were evaluated at baseline (T0), and randomized to treatment or control. They were then re-evaluated (T1) then re-randomized to the other condition, and re-evaluated (T2).
- Participants were divided into two groups: 10 sessions of myofascial treatment (MSI) or play group (PLAY) once per week for 10 weeks. 
- MSI group received initial treatment in 3 weekly sessions during the first month and continued with one-hour sessions per week for the next 9 weeks.
- PLAY group was instructed to engage in age-appropriate play, activities included coloring, card games, puzzles and imaginative play.

**OUTCOME MEASURES**
- **GMFM:** This scale was used to measure the angle of flexion and extension in random order. 
- **OGS:** Based on observational analysis of gait in related to sitting, crawling, standing, walking, running and jumping. 

**RESULTS**
- **GMFM Score:**
  - **Subject:**
    - Subject 001: L 2 spastic diplegia
    - Subject 002: M 2 spastic diplegia
    - Subject 003: F 2 spastic diplegia
    - Subject 004: M 2 spastic diplegia
    - Subject 005: F 2 spastic diplegia
    - Subject 006: F 4 quadriplegia, ataxia
    - Subject 007: M 4 spastic diplegia
    - Subject 008: F 4 spastic diplegia
    - Subject 009: M 2 dystonic quadraplegia
    - Subject 010: M 5 spastic diplegia

- **Motor Function:**
  - **Range of Motion (ROM):**
    - **Subject 001**
      - Ankle dorsiflexion: T0 = 20°, T1 = 25°, T2 = 30°
    - **Subject 002**
      - Ankle dorsiflexion: T0 = 15°, T1 = 20°, T2 = 25°

- **Additional Observations:**
  - Subject 001: Improved balance, coordination, and ability to walk.
  - Subject 002: Improved balance, coordination, and ability to walk.

**SUMMARY & CONCLUSION**
- **Six of the eight children in the study showed improvement in their GMFM score:**
  - Three children showed improvements in ankle dorsiflexion after MSI.
  - One child showed clear, recognizable improvements on OGS. Scores on the ICF improved in all children.
  - Only one child showed clearly recognizable improvements on OGS. Scores on the ICF improved in all children.
  - Parental reports noted observations in children beyond those that were reflected in outcome measures.

**Myofascial Structural Integration Therapy holds promise as a complementary treatment for young children with cerebral palsy**

Myofascial Structural Integration may be particularly valuable when children are young and beginning to develop motor skills

Myofascial Structural Integration may benefit beyond decreasing spasticity, such as increased growth and appetite

**REFERENCES**