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Spring 10-30-2020

## **Antagonistic Asynchrony in Muscle Recruitment Pattern of Forward Reach Movement In Children With Cerebral Palsy.**

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## **Antagonistic Asynchrony in Muscle Recruitment Pattern of Forward Reach Movement In Children With Cerebral Palsy.**

### **Abstract:**

Children with Cerebral Palsy (CP) have a longer duration and poor quality of reaching movements than the Typically Developing (TD) children. In this study, we analyzed the order and timing of Biceps Brachii and Triceps Brachii muscle recruitment pattern among children with CP and TD in forward reach task. Thirty-eight children (n=19 CP and n=19 TD) by recording Electromyogram (EMG), after obtaining ethical clearance. Rectified EMG signals determined the onset of muscle activation, and data were analyzed using unpaired Student's 't' – test and Chi-square test. In CP, there was a greater likelihood of Biceps Brachii firing prior to Triceps Brachii as compared to TD, for whom the greater probability of Triceps Brachii firing first. (Likelihood ratio (LLR) =28.164;  $p<0.001$ ). In TD children, the Triceps Brachii have elevated bio-potential, which was generated earlier during the task, followed by Biceps Brachii. As in the CP group, the sequence was reversed (LLR 28.164;  $p<0.001$ ).

**Key Words:** Agonist activity; Antagonist activity; Cerebral Palsy; Electromyography; Forward reach movement.