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Pediatric Spinal Cord Injury Spasticity Interventions

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Pediatric Spinal Cord Injury Spasticity Interventions

Muscle spasticity is a common spinal cord injury sequela that causes muscle stiffness, spasms, and painful involuntary contractions. Spasticity can result in difficulty walking, deformed joints, lack of head control, and impairment performing activities of daily living. Spasticity is dynamic and often requires a multifaceted approach to manage symptoms and achieve patient goals. The leading treatment for spasticity is oral Baclofen. Additional treatment methods include electrical stimulation and phenol injections. Oral baclofen is frequently prescribed in combination with these.

Research suggests SCI induced spasticity can cause changes in the muscle. Thus, it is important to assess neural and muscle impacts of treatment. This study will compare the efficacy of treatment modalities in reducing spasticity, fatigue, pain level and improving quality of life. The purpose of this study is to evaluate which treatment approach yields the most positive impact on these factors. Treatments included in the study are oral Baclofen as compared to oral Baclofen in combination with electrical stimulation and oral Baclofen combined with phenol injections.

A survey will be developed encompassing treatment efficacy indicators from Penn Spasm Frequency and Severity Scale (PSFS), Brief Pain Inventory, Epworth Sleepiness Scale, Fatigue Severity Scale, Satisfaction with Life Assessment, Oral Spasticity Medical Survey, and SCI-SET. The survey will be administered on paper and provided to developmentally appropriate patients or primary caregivers. Participants will be asked to specify which type of treatment they are receiving, how long they have been receiving the treatment, and rank improvement or deterioration of spasticity frequency, spasticity severity, fatigue, pain level, quality of life in the last seven days. Participants will complete the survey weekly for a span of three months. Results of the surveys will be aggregated to develop a treatment algorithm identifying the most successful combination of interventions based on patient evaluation of symptom improvement.