

exhibited normal repertoire and 17.2% ($n=5$) of control group showed normal repertoire ($p=0.042$).

Conclusions or Significance: Present study has provided preliminary evidence that SNP intervention may be effective in improving the neurobehavioral organisation and quality of spontaneous repertoire of MLP infants which may augment development and in turn reduce the burden of long term disability.

T-P-SP07

Established indications, benefits and shortcomings of lower limb orthoses in the management of children with cerebral palsy: clinical practice guidelines

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Background and Objective(s): To create succinct, evidence-based clinical practice guidelines (CPGs) regarding the established benefits and indications for ankle foot orthoses (AFOs) for children with cerebral palsy (CP).

Study Design: CPG development was based on the model described and utilized by the American College of Physicians. Namely, systematic review to identify the highest levels of published evidence, subsequent extraction of evidence statements related to comparative efficacy, benefits and harms of the targeted treatment modality, and synthesis into concise clinical recommendations.

Study Participants and Settings: The identified source publications reported upon an average of 18 clinical trials (range, 7–31) inclusive of an average of 837 children with CP using some type of AFO (range, 490–1129).

Materials and Methods: A systematic literature search was conducted using the following search terms: (“cerebral palsy”) AND (“orthosis”) AND (“systematic review” OR “meta-analysis”). Publications that were not systematic reviews or meta-analyses, or that were more than 10 years old were excluded. Reviews on the effects of functional electrical stimulation (FES), surgical techniques, therapeutic modalities, upper limb orthoses, and lower limb orthosis reporting guidelines were likewise excluded. Evidence statements were then extracted through consensus agreement from the identified source publications by the authors. Specifically, statements related to comparative efficacy, potential benefits and potential harms of the use of AFOs by children with CP were identified. These were subsequently synthesized to generate the recommendations of the CPG.

Results: The original search yielded 18 abstracts. Two publications initially met the inclusion criteria. Two additional publications were identified from the authors’ collections. The following recommendations were synthesized from the secondary knowledge sources and their extracted evidence statements as CPGs. Recommendation #1: Among children with CP, AFOs are indicated to increase gross motor function. Recommendation #2: Among children with spastic CP and equinus, AFOs are indicated to increase stride length and gait speed and decrease cadence, with greater impacts observed in

children with hemiplegia than in diplegia. Recommendation #3: Among children with spastic CP and equinus, AFOs are indicated to increase ankle dorsiflexion during swing phase and at initial contact. Recommendation #4: Among children with CP AFOs may have an effect on ankle power generation during ambulation. Limitations: Current evidence provides little high-level consensus with respect to different AFO designs and patient presentations. This is due to the broad range of devices used and subjects treated in clinical trials, and inadequate descriptions of both in research publications. The isolated benefits of AFOs fall short of fully remediating the complex deficits observed in the gait of children with CP. Additional research is needed to inform upon patient and family values and preferences in this area.

Conclusions or Significance: While additional research is needed to determine which patient types are most likely to attain the desired benefits associated with AFOs, and which AFO design variants are most appropriate across the range of patient presentations, a number of general indications and benefits have been observed at the level of systematic review and meta-analysis. These include improvements in gross motor function, temporospatial elements in gait and targeted lower limb kinematic trends.

T-P-SP08

Parent-reported motor function using PEDI-CAT is related to GMFM and GMFCS for children with cerebral palsy

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Background and Objective(s): Cerebral palsy (CP) is the leading cause of childhood disability, occurring in 1 in 700 live births. Movement and posture limitations affect activity and participation. Involving parents in assessment, treatment planning, and implement of intervention is associated with increased adherence to rehabilitation recommendations. Three common or emerging assessments include: (1) The Gross Motor Function Classification Scale (GMFCS) used to objectively classify children with CP by motor function. Parent- and clinician-rating of GMFCS levels is highly consistent. (2) The Gross Motor Function Measure (GMFM) used by clinicians for motor evaluation for children with CP and takes ~1 hour to complete. (3) The Computer Adapted Test (PEDI-CAT) is based on item-response theory from the original PEDI. The PEDI-CAT is a parent-report measure. The mobility subscale of the PEDI-CAT (PEDI-mob) can be completed in 4 minutes. Previous work indicates that parents can accurately report motor function for older children with CP across all GMFCS levels. Newly established diagnosis criteria make early CP or high risk for CP diagnosis possible by 6 months of life. The purpose of this study is to determine the relationships between GMFM, GMFCS level, and PEDI-mob across a wide age range and with varying levels functional impairments considering the parents as partners in assessment of mobility.

Study Design: Observational cohort study.