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Interventions and Management

1. Ann Phys Rehabil Med. 2012 Nov 2. pii: S1877-0657(12)01286-9. doi: 10.1016/j.rehab.2012.10.004. [Epub ahead of print]

The role of head stabilization in locomotion in children with cerebral palsy.

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OBJECTIVE: The objective of the present study was to highlight the role of head stabilization and to analyze multisegment head-trunk coordination during gait in children with cerebral palsy (CP). **MATERIAL AND METHOD:** Postural control was measured and compared in a group of 16 CP subjects and a control group of 16 healthy subjects. The subjects had to walk along an out-and-back course at their freely chosen gait speed. For each gait cycle, motion analysis techniques were used to calculate the amplitude of the head angle (relative to the trunk) in the sagittal and frontal planes. **RESULTS:** Kinematic analysis revealed a number of significant intergroup differences, with a more pronounced variation in the head angle (relative to the trunk) in the CP group than in the control group. There were no significant intergroup differences in terms of the angular amplitude of the head in the sagittal plane. **CONCLUSION:** The greater variability of the head angle in the frontal plane in the CP subjects might reflect the presence of greater head roll as a compensatory strategy. These findings suggest that the clinical evaluation of posture during gait in children with CP should be reconsidered.

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[PMID: 23165246](https://pubmed.ncbi.nlm.nih.gov/23165246/) [PubMed - as supplied by publisher]

2. Brain Dev. 2012 Nov 17. pii: S0387-7604(12)00270-7. doi: 10.1016/j.braindev.2012.10.012. [Epub ahead of print]

Comparative assessment of therapeutic response to physiotherapy with or without botulinum toxin injection using diffusion tensor tractography and clinical scores in term diplegic cerebral palsy children.

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The present study was to compare the effects of combined therapy [botulinum (BTX) plus physiotherapy] with physiotherapy alone using diffusion tensor imaging (DTI) derived fractional anisotropy (FA) values of motor and sensory fiber bundles and clinical grade of the disability to see the value of BTX in term children with spastic diplegic cerebral palsy (CP). Clinically diagnosed 36 children participated in the study. All these children were born at term, and had no history of seizures. The study was randomly categorized into two groups: group I (n=18) - physiotherapy alone and group II (n=18) - physiotherapy plus BTX injection. Quantitative diffusion tensor tractography on all these children was performed on motor and sensory fiber bundles on baseline as well as after 6 months of therapy. Motor function and clinical grades were also measured by gross motor function measures (GMFM) scale on both occasions. We observed significant change in FA value in motor and sensory fiber bundle as well as in GMFM scores at 6 months compared to baseline study in both the groups. However, delta change and relative delta change in FA values of sensory and motor fiber bundle as well as GMFM score between group I and group II was statistically insignificant. We conclude that addition of BTX to physiotherapy regimen does not influence the outcome at 6 months with similar insult in children with term diplegic spastic CP. This information may influence management of diplegic CP especially in developing countries, where BTX is beyond the reach of these children.

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3. Indian J Orthop. 2012 Sep;46(5):602. doi: 10.4103/0019-5413.101053.

Utility of combined hip abduction angle for hip surveillance in children with cerebral palsy.

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[PMID: 23162160](#) [PubMed - in process] PMCID: PMC3491801

4. Saudi J Anaesth. 2012 Jul;6(3):282-4. doi: 10.4103/1658-354X.101223.

Obturator neurolysis using 65% alcohol for adductor muscle spasticity.

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Spasticity is motor alteration characterized by muscle hypertonia and hyperreflexia. It is an important complication of spinal cord injury, traumatic brain injury, cerebral palsy, and multiple sclerosis. If uncorrected, fibrosis and eventually bony deformity lock the joint into a fixed contracture. Chemical neurolysis using various agents is one of the therapeutic possibilities to alleviate spasticity. We are, hereby, reporting 3 patients in whom 65% alcohol was used as neurolytic agent for the treatment of hip adductor spasticity, and the effect lasted for a variable period.

[PMID: 23162405](#) [PubMed - in process] PMCID: PMC3498670

5. Dev Med Child Neurol. 2012 Dec;54(12):1073-4. doi: 10.1111/dmcn.12028.

Stability of the Gross Motor Function Classification System after single-event multilevel surgery in cerebral palsy.

McCormick A.

Children's Hospital of Eastern Ontario - Rehabilitation PSU, Ottawa, ON, Canada.

[PMID: 23163815](#) [PubMed - in process]

6. Aust Occup Ther J. 2012 Dec;59(6):428-36. doi: 10.1111/j.1440-1630.2012.01036.x. Epub 2012 Oct 25.

Contribution of occupational therapists in positive behaviour support.

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AIM: Positive behaviour support employs specific strategies which aim to both reduce the incidence of behaviours of concern and enhance the quality of life of people with intellectual disabilities. This study aims to identify activities and experiences of occupational therapists working in behaviour support contexts to understand how they see their contributions in this area. METHODS: Semi-structured interviews were undertaken with 10 occupational therapists who have provided behaviour support for people with intellectual disabilities. Audio recordings were transcribed verbatim and thematically analysed. RESULTS: Three major themes emerged from the interview data: contextualising and understanding behaviour; occupational therapy - why and how?; and 'challenges, strengths and expanding horizons'. CONCLUSIONS: Participants saw themselves as providing an occupational perspective in the delivery of behaviour support, to individuals with behaviour support needs. They highlighted that this was achieved utilising their skills and knowledge about positive behaviour support strategies. Their approaches were seen as drawing on: their understanding of neurological function and how it relates to a person's occupational engagement; combining occupationally focussed approaches with behavioural analysis methodology to guide practice; and advocating for person-centred interventions. These observations form the basis for exploring ways in which occupational therapists can advance their contributions in positive behaviour support settings.

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7. Disabil Rehabil. 2012 Nov 20. [Epub ahead of print]

Sorrow, coping and resiliency: parents of children with cerebral palsy share their experiences.

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Purpose: To explore the grieving, coping and resiliency experiences of parents of children with cerebral palsy (CP) and to investigate the suitability of chronic sorrow theory as a framework to understand those experiences. Methods: This study combined focus groups with a web-based cross-sectional survey to explore chronic sorrow in parents of children with CP. Eight parents of children with CP participated in focus groups. The discussion was transcribed verbatim and thematic analysis was performed. A further 94 parents participated in the web-based survey study in which they completed the Adapted Burke Questionnaire on chronic sorrow. A content analysis of responses was used to confirm the primary qualitative analysis. Results: The reports of parents in the focus group were consistent with chronic sorrow theory, as were the responses of parents to the web-based survey. Some parents found the diagnosis itself a distressing time whereas others found it a relief. Parents reported that times of medical and allied health intervention were particularly challenging. Conclusion: Chronic sorrow theory is a useful way of understanding the experiences of parents of children with CP. It is recommended that health practitioners are mindful that, even years after diagnosis, parents of children with CP may experience intensified chronic sorrow symptoms following a triggering event and that this is normal. [Box: see text].

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Prevention and Cure

7. Pediatrics. 2012 Nov 19. [Epub ahead of print]

Cerebral Palsy and Neonatal Death in Term Singletons Born Small for Gestational Age.

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BACKGROUND AND OBJECTIVES: To investigate the probable timing of events leading to cerebral palsy (CP) in singletons born small for gestational age (SGA) at term, taking neonatal death into consideration. **METHODS:** In this registry-based cohort study, data on 400 488 singletons born during 1996-2003 were abstracted from the Medical Birth and the CP registries of Norway. Among 36 604 SGA children (birth weight <10th percentile), 104 died in the neonatal period and 69 developed CP. Apgar scores at 5 minutes, risk factors, MRI findings, and CP subtypes were used to assess the timing of events leading to CP or neonatal death. **RESULTS:** Intrapartum origin of CP was considered in 5 SGA children (7%; 95% confidence interval: 3-16) in comparison with 31 of 263 (12%; 95% confidence interval: 8-16) non-SGA children ($P = .28$). The proportions of children who died in the neonatal period after a probable intrapartum event did not differ between the groups when children with congenital malformations were excluded. Probable antenatal events leading to CP and neonatal death were more common among SGA than non-SGA children ($P < .001$). **CONCLUSIONS:** In ~90% of children born SGA the event leading to CP is of probable antenatal origin. The low proportion of SGA children with CP after a probable intrapartum event was not outweighed by a higher neonatal mortality rate when congenital malformations were excluded. The higher risk of CP among SGA than among non-SGA children is probably due to a higher prevalence of antenatal risk factors.

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