

Monday 14 June 2010

This free weekly bulletin lists the latest research on cerebral palsy (CP), as indexed in the NCBI, PubMed (Medline) and Entrez (GenBank) databases. These articles were identified by a search using the key term "cerebral palsy".

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Interventions

1. Clin Rehabil. 2010 Jun 8. [Epub ahead of print]

Adapted version of constraint-induced movement therapy promotes functioning in children with cerebral palsy: a randomized controlled trial.

Brandão MD, Mancini MC, Vaz DV, de Melo AP, Fonseca ST.

Graduate Program in Rehabilitation Sciences, Universidade Federal de Minas Gerais, Brazil.

Objective: To evaluate the effects of constraint-induced movement therapy on the use of the affected arm and on daily functioning in children with hemiplegic cerebral palsy. **Design:** A single-blinded randomized clinical trial. **Subjects:** Sixteen children with cerebral palsy randomized to intervention (n = 8, 4 males, 4 females, mean age 5 years and 6 months) and control groups (n = 8, 4 males, 4 females, mean age 6 years and 7 months). **Interventions:** Non-affected arm of intervention group was restricted for 10 hours/day and the affected arm intensively trained for 3 hours/day for two weeks. The intervention protocol included one week of bimanual functional training following constraint therapy. The control group maintained usual rehabilitation throughout the intervention period. **MAIN MEASURES:** Pediatric Evaluation of Disability Inventory (self-care domain) and an adapted version of the Jebsen-Taylor test were administered before and after intervention, and at one month follow-up. General linear models tested differences in gain scores and the number needed to treat estimated relative effectiveness of intervention protocol for functional skills and independence in self-care. **Results:** Results are reported for 15 children who completed assessments and intervention. Higher gains were observed in the intervention group for functional skills and independence post intervention (dfunctional skills = 1.61, P = 0.0134; dindependence = 1.37; P = 0.0001) and follow-up (dfunctional skills = 2.08, P = 0.004; dindependence = 0.85; P = 0.0016). No group difference in manual dexterity gains was observed. Low indices of number needed to treat (1.75 and 2.33) illustrate clinical relevance of intervention. **Conclusions:** The protocol associating constraint-induced movement therapy and bimanual functional training was effective in promoting daily living functioning among children with cerebral palsy.

PMID: 20530645 [PubMed - as supplied by publisher]

2. Disabil Rehabil. 2010 Jun 8. [Epub ahead of print]

Factors influencing postural management for children with cerebral palsy in the special school setting.

Maher CA, Evans KA, Sprod JA, Bostock SM.

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Purpose. Postural management is used to help address the musculoskeletal and participation issues associated with cerebral palsy (CP). This study aimed to identify the factors influencing postural management in special

schools. Method. A purpose-designed, cross-sectional, descriptive survey was sent to teachers, physiotherapists, occupational therapists and speech pathologists working with children with moderate-to-severe CP, aged 5-12 years, in special schools within South Australia. The instrument included four main areas: demographics, perceived benefits of postural management, factors facilitating or hindering the implementation of postural management programmes and suggestions for improvement. Results were analysed descriptively. Results. Forty-three therapists and 18 teachers completed the survey (response rate 81%). The most common factors hindering postural management were positioning equipment being unavailable or difficult to use, lack of time and school staff's knowledge and skills to carry out postural management. Facilitating factors included therapy staff providing a written postural management programme, open and regular communication between therapy and school staff and timetabling of postural management into the daily routine. Conclusions. Numerous factors impact on postural management for students in special schools. Practical solutions highlighted were increased training for school staff, timetabling of postural management into students' routines and provision of written postural management programmes.

PMID: 20528253 [PubMed - as supplied by publisher]

3. Nat Rev Urol. 2010 Jun 8. [Epub ahead of print]

Achieving urinary continence in children.

Wu HY; Medscape.

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Achievement of urinary continence is an important developmental step that most children attain with the assistance of their parents and caregivers. Debate continues as to the best time to toilet train; in some Asian and African cultures children are trained as infants, while training at age 2-3 years is more typical in Western cultures. Infant voiding is not merely a spinal reflex, as the sensation of bladder filling is relayed to the brain. However, the ability of the brain to inhibit bladder contractions, and to achieve coordinated bladder contraction with sphincter relaxation, matures over time. While there is a concern that later toilet training may be responsible for an increase in urinary incontinence in children, no controlled studies on early versus late toilet training exist to evaluate this hypothesis. A number of medical conditions such as spina bifida, posterior urethral valves, cerebral palsy and autism can cause incontinence and difficulties in toilet training. The decision to start toilet training a child should take into account both the parents' expectation of how independent the child will be in terms of toileting, and the child's developmental readiness, so that a realistic time course for toilet training can be implemented.

PMID: 20531385 [PubMed - as supplied by publisher]

4. J Child Neurol. 2010 Jun 4. [Epub ahead of print]

Prolonged Electromyogram Biofeedback Improves Upper Extremity Function in Children With Cerebral Palsy.

Bloom R, Przekop A, Sanger TD.

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Biofeedback of muscle activity is commonly used as an adjunct to physical therapy, but it has not previously been used for long-term treatment of movement disorders. The authors hypothesized that chronic daily use of biofeedback of muscle electrical activity might promote improved use of the upper extremity in children with cerebral palsy and upper extremity motor deficits. They constructed a portable electromyography (EMG) unit that includes a surface EMG sensor and amplifier, microcontroller-based nonlinear signal processing, and vibration feedback of muscle activity. A total of 11 children ages 6 to 16 years, with cerebral palsy or acquired static brain injury, wore the device at least 5 hours per day for 1 month. Changes in upper extremity function were assessed using an individualized Goal Attainment Scale. Results showed significant clinical improvement in all 10 children who completed the study. These results suggest that further testing of prolonged surface EMG biofeedback is warranted.

PMID: 20525944 [PubMed - as supplied by publisher]

5. Tech Hand Up Extrem Surg. 2010 Jun;14(2):129-34.**Tendon transfers and releases for the forearm, wrist, and hand in spastic hemiplegic cerebral palsy.**

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Cerebral Palsy (CP) is a static disorder of movement and posture secondary to an insult to the developing central nervous system. The peripheral manifestations and functional impairments of this condition vary in severity from mild-to-profound. In hemiplegic CP, 1 side of the body is affected more than the other. Spastic hemiplegia is the most common type and that for which upper extremity surgery is most indicated. Treatment options range from physical therapy and splinting to botulinum toxin A injections (Botox) to tendon transfers to arthrodeses. This article will discuss the indications, preoperative evaluation, our preferred surgical technique, and postoperative protocol for the most commonly used tendon transfers in the upper extremity in spastic hemiplegia.

PMID: 20526169 [PubMed - in process]

6. Tech Hand Up Extrem Surg. 2010 Jun;14(2):69-72. Wrist arthrodesis with volar plate fixation in cerebral palsy.

Gong HS, Kang JY, Lee JO, Chung MS, Baek GH.

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Wrist arthrodesis can obtain better appearance, hygiene, and ease of daily care, with some degree of functional improvement in patients with cerebral palsy with a severe wrist flexion deformity. Rigid fixation using a dorsal plate and screws has been accepted as a reliable technique, although hardware-related problems are relatively common. We describe a volar plate fixation technique for wrist arthrodesis in cerebral palsy, which can allow concomitant flexor tendon release and avoid a prominent hardware and a cosmetically undesirable scar on the dorsum of the wrist.

PMID: 20526157 [PubMed - in process]

7. Psychiatry (Edgmont). 2010 May;7(5):37-41. Cranial Nerves IX, X, XI, and XII.

Gillig PM, Sanders RD.

Dr. Gillig is Professor of Psychiatry and Faculty of the Graduate School, Department of Psychiatry, Wright State University, Dayton, Ohio.

This article concludes the series on cranial nerves, with review of the final four (IX-XII). To summarize briefly, the most important and common syndrome caused by a disorder of the glossopharyngeal nerve (cranial nerve IX) is glossopharyngeal neuralgia. Also, swallowing function occasionally is compromised in a rare but disabling form of tardive dyskinesia called tardive dystonia, because the upper motor portion of the glossopharyngeal nerve projects to the basal ganglia and can be affected by lesions in the basal ganglia. Vagus nerve function (cranial nerve X) can be compromised in schizophrenia, bulimia, obesity, and major depression. A cervical lesion to the nerve roots of the spinal accessory nerve (cranial nerve XI) can cause a cervical dystonia, which sometimes is misdiagnosed as a dyskinesia related to neuroleptic use. Finally, unilateral hypoglossal (cranial nerve XII) nerve palsy is one of the most common mononeuropathies caused by brain metastases. Supranuclear lesions of cranial nerve XII are involved in pseudobulbar palsy and ALS, and lower motor neuron lesions of cranial nerve XII can also be present in bulbar palsy and in ALS patients who also have lower motor neuron involvement. This article reviews these and other syndromes related to cranial nerves IX through XII that might be seen by psychiatry.

PMID: 20532157 [PubMed - in process]

8. Disabil Rehabil. 2010;32(10):845-54.

Perceptions of disability among mothers of children with disability in Bangladesh: implications for rehabilitation service delivery.

Maloni PK, Despres ER, Habbous J, Primmer AR, Slatten JB, Gibson BE, Landry MD.

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BACKGROUND: Eighty-five percent of children with disabilities (CWD) live in developing countries, and <5% receive rehabilitation services. **PURPOSE:** To describe perceptions of disability among mothers of CWD in Bangladesh, and to explore how these perceptions influence the care sought for their CWD. **METHODS:** Descriptive qualitative research methods were employed. Eleven semi-structured interviews were conducted with mothers of CWD receiving services at a large pediatric rehabilitation facility in Bangladesh. Interviews were recorded and transcribed, and data were coded and analyzed to identify themes. **RESULTS:** Three primary categories of themes emerged: (1) mothers' perceptions of disability; (2) perceptions of treatment; and (3) expectations for the future of their CWD. The findings suggest that the family members, healthcare providers, and the rehabilitation setting have a considerable influence on mothers' perceptions. Study participants had adopted a biomedical understanding of disability and treatment, but reported that family elders continued to believe strongly in traditional explanations creating conflict regarding appropriate treatment approaches. Participants suggested that education and peer support networks provided in the rehabilitation setting played (or could play) a critical role in addressing these conflicts. **CONCLUSION:** Understanding mothers' perceptions of disability and treatment, and the myriad of factors that influence those perceptions, provides valuable knowledge to assist in planning and delivery of family centered rehabilitation services for CWD. Rehabilitation has a central role to play in assisting mothers' understanding of the nature of their children's disabilities and how they can be managed. Ultimately, such an understanding may translate into improved social and educational opportunities for CWD.

PMID: 20131951 [PubMed - indexed for MEDLINE]

Epidemiology / Aetiology / Diagnosis & Early Treatment

Please note: This is not yet a comprehensive outline of cerebral palsy prevention literature. It is expected that more research will be included when the search terms are expanded to include key terms other than "cerebral palsy". It is a work-in-progress and it will be expanded in coming months.

9. J Child Neurol. 2010 Jun 4. [Epub ahead of print]

Clinical Outcome and Magnetic Resonance Imaging Findings in Infants With Hypoglycemia.

Caksen H, Güven AS, Yilmaz C, Unal O, Basaranoglu M, Sal E, Kaya A.

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The authors examined clinical outcome and cranial magnetic resonance imaging (MRI) findings in infants with hypoglycemia to determine the effects of hypoglycemia on the developing brain. A total of 110 infants with hypoglycemia were included in the study. Of the patients, 36 were females and 74 were males. The age of the infants was between 1 day and 22 months. Of the 110 infants, 47 were preterm neonates, 40 were term neonates, and 23 were older than 28 days. No difference in serum glucose level was noted between symptomatic and asymptomatic infants. The most common observed abnormal findings were hyperintense lesions, encephalomalacia, and cerebral atrophy. Abnormal MRI findings were found in 4% of preterm infants, in 32.5% of term infants, and in 43.5% of older infants. Abnormal MRI findings were statistically significantly more common in symptomatic infants than in asymptomatic infants. Of the infants, 45.5% of hypoglycemic infants had cerebral palsy and/or cerebral palsy plus epilepsy.

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