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## 1: Eur J Pediatr. 2008 Jun 13. [Epub ahead of print]

### **Relationship among the Manual Ability Classification System (MACS), the Gross Motor Function Classification System (GMFCS), and the functional status (WeeFIM) in children with spastic cerebral palsy.**

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The aim of this study was to investigate the relationship among functional classification systems, the Manual Ability Classification System (MACS), the Gross Motor Function Classification System (GMFCS), and the functional status (WeeFIM) in children with spastic cerebral palsy (CP). One hundred and eighty-five children with spastic CP (101 males, 84 females), 65 (35.1%) diparetic, 60 (32.4%) quadriparetic, and 60 (32.4%) hemiparetic children, ranging from 4 to 15 years of age with a median age of 7 years, were included in the study. The children were classified according to the GMFCS for their motor function and according to the MACS for the functioning of their hands when handling objects in daily activities. The functional status and performance were assessed by using the Functional Independence Measure of Children (WeeFIM). A good correlation between the GMFCS and MACS was found in all children ( $r = 0.735$ ,  $p < 0.01$ ). There was also a correlation between the GMFCS and WeeFIM subscales according to subtypes and all parameters were correlated at the level of  $p < 0.01$ , the same as the MACS. There was no difference in the MACS scores among the age groups of 4-7, 8-11, and 12-15 years ( $p > 0.05$ ). The use of both the GMFCS and MACS in practice and in research areas will provide an easy, practical, and simple classification of the functional status of children with CP. The adaptation of both of these scales and WeeFIM and using these scales together give the opportunity for a detailed analysis of the functional level of children with spastic CP and reflect the differences between clinical types of CP.

PMID: 18551314 [PubMed - as supplied by publisher]



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**2: BMC Gastroenterol. 2008 Jun 11;8(1):23. [Epub ahead of print]**

**Symptoms of gastroesophageal reflux disease in severely mentally retarded people: a systematic review.**

de Veer AJ, Bos JT, Niezen-de Boer RC, Bohmer CJ, Francke AL.

**ABSTRACT: BACKGROUND:** Gastroesophageal reflux disease (GERD) occurs when stomach acid frequently backs up (or refluxes) into the gullet (or esophagus), and it has serious consequences for the quality of life. Usually this is felt as heartburn. Because severely mentally retarded people usually do not utter complaints of heartburn, it requires a high index of suspicion to discover possible GERD. Therefore it is relevant for care professionals such as nurses to have knowledge of those with a higher risk of GERD and of the possible manifestations of GERD. **METHODS:** Using a predefined search method, electronic databases were searched for studies relating the presence of symptoms to the presence of GERD. Relevant data were extracted and the methodological quality of the studies assessed. The results of the included studies were synthesized and conclusions about the level of evidence were drawn. **RESULTS:** Nineteen studies were found relating symptoms to the presence of GERD. Only four were of good methodological quality. The studies were very diverse concerning the studied population, the study method, and the kind of symptoms examined. This makes it difficult to synthesize the results of the studies. There is evidence that patients with cerebral palsy, patients using anticonvulsive drugs, and those with an IQ lower than 35 more frequently have GERD. There is also evidence that vomiting, rumination and hematemesis are associated with a higher risk of the presence of GERD, whereas there is no clear scientific evidence that particular behavior symptoms are indicative for GERD. **CONCLUSIONS:** The possible manifestations of GERD are many and varied. A guideline will be made for care professionals to aid systematic observation of possible manifestations of GERD.

PMID: 18547405 [PubMed - as supplied by publisher]

**3: J Biomech. 2008 Jun 10. [Epub ahead of print]**

**Assessment of Flexor carpi ulnaris function for tendon transfer surgery.**

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Active and passive length-force curves of spastic flexor carpi ulnaris (FCU) muscles were intra-operatively measured in 10 patients with cerebral palsy to study the variability in FCU muscle function. Maximum active FCU force was in general situated near the neutral position of the wrist and varied between 40 and 135N. Passive forces varied between 1 and 8N at maximum active force. The potential active excursion varied between 4 and 7cm, while patients moved their wrists from flexion to extension along different parts of the active length-force curve. We measured a large inter-individual variety of spastic FCU muscle function in this group of patients. Thus, tailoring the surgical technique of tendon transfer to the specific needs of the desired function requires the assessment of muscle-specific data for each individual patient.

PMID: 18550068 [PubMed - as supplied by publisher]

**4: Pediatr Dev Pathol. 2008 Jun 10:1. [Epub ahead of print]****Cerebral palsy in term infants: a clinicopathologic analysis of 158 medicolegal case reviews.**

Redline R.

Our understanding of cerebral palsy (CP) in term infants is hindered by its low incidence and sporadic presentation. Many of these cases enter litigation and a focused review of medicolegal consultations provides an opportunity to better understand their pathogenesis. In this study complete clinical and pathologic data from 158 cases of CP complicating singleton pregnancies after 36 weeks gestation was prospectively collected over a ten-year period from 1998-2008. A hierarchical system was used to separate cases into five groups: 1- clinical/ sentinel events (20%), 2- severe large fetoplacental vascular lesions (34%), 3- placental lesions indicative of chronic placental dysfunction (23%), 4- placental lesions suggestion of subacute/chronic adaptation to hypoxia (15%). The remaining 8% (group 5) were idiopathic. Common to all subgroups was clinical and/or pathologic evidence of umbilical cord obstruction, which was observed in 63% of cases. The following clinical features significantly differed between subgroups. Group 1 had less maternal obesity and more cases with multicystic encephalopathy. Group 2 had increased oligohydramnios, cerebral edema, nucleated red blood cell counts greater than 10,000/mm<sup>3</sup>, hypoglycemia, pulmonary hypertension, and cardiac dysfunction. Group 3 had more preeclampsia and, together with group 2, more infants with a low ponderal index. Group 5 had a higher prevalence of positive family history of neurodevelopmental disorders. In conclusion, infants subject to litigation related to CP following term birth can be separated into distinct clinicopathologic subgroups with only a small number lacking either clinical/ sentinel events or placental evidence of subacute or chronic in utero stress.

PMID: 18544009 [PubMed - as supplied by publisher]

**5: Pediatrics. 2008 Jun 9. [Epub ahead of print]****Risk Factors for Adverse Outcome in Preterm Infants With Periventricular Hemorrhagic Infarction.**

Roze E, Kerstjens JM, Maathuis CG, Ter Horst HJ, Bos AF.

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**OBJECTIVE.** Our objective was to identify risk factors that were associated with mortality and adverse neurologic outcome at 18 months of age in preterm infants with periventricular hemorrhagic infarction. **METHODS.** This was a retrospective cohort study of all preterm infants who were <37 weeks' gestation, had periventricular hemorrhagic infarction, and were admitted between 1995 and 2006. Ultrasound scans were reviewed for grading of germinal matrix hemorrhage, localization and extension of the infarction, and other abnormalities. Several clinical factors were scored. Outcome measures were mortality, cerebral palsy, and Gross Motor Function Classification System level. Odds ratios were calculated by univariate and multivariate logistic regression analyses. **RESULTS.** Of 54 infants, 16 (30%) died. Twenty-five (66%) of 38 survivors developed cerebral palsy: 21 mild (Gross Motor Function Classification System levels 1 and 2) and 4 moderate to severe (levels 3 and 4). Several perinatal and neonatal risk factors were associated with mortality. After multivariate logistic regression, only use of inotropic drugs and maternal intrauterine infection were predictors of mortality. In survivors, only the most extended form of periventricular hemorrhagic infarction was associated with the development of cerebral palsy but not with severity of cerebral palsy. Cystic periventricular leukomalacia and concurrent grade 3 germinal matrix hemorrhage were associated with more severe cerebral palsy. **CONCLUSIONS.** In preterm infants with periventricular hemorrhagic infarction, mortality occurred despite optimal treatment and was associated with circulatory failure and maternal intrauterine infection. In survivors, motor development was abnormal in 66%, but functional abilities were good in the majority. Extension and localization of the periventricular hemorrhagic infarction were not related to functional outcome.

PMID: 18541618 [PubMed - as supplied by publisher]

**6: Res Dev Disabil. 2008 Jun 7. [Epub ahead of print]**

**Home literacy predictors of early reading development in children with cerebral palsy.**

Peeters M, Verhoeven L, de Moor J, van Balkom H, van Leeuwe J.

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The goal of the present 1-year long longitudinal study was to determine which home literacy variables were effective in stimulating early reading skills of children with cerebral palsy (CP) directly or indirectly via the reading precursors. Parents of 35 children with CP completed questionnaires regarding aspects of the home literacy environment (HLE). The reading precursors: Vocabulary, Syntactic skills and phonological awareness, i.e., Rhyme and Phonemic awareness, were assessed at the end of Kindergarten and the end of Grade 1, while the early reading skills Letter knowledge and Word recognition were assessed only at the end of Grade 1. Three HLE variables were found to be related to reading precursors and early reading skills: Parent literacy mediation, Word orientation and Story orientation activities during shared book reading. Path analyses showed that these three HLE variables were not directly related to early reading skills in Grade 1, but indirectly via the reading precursors, in particular phonological awareness.

PMID: 18541405 [PubMed - as supplied by publisher]

**7: Am J Obstet Gynecol. 2008 Jun;198(6):682.e1-5.**

**Google obstetrics: who is educating our patients?**

Kaimal AJ, Cheng YW, Bryant AS, Norton ME, Shaffer BL, Caughey AB.

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**OBJECTIVE:** This study was undertaken to investigate the sources of information retrieved by searching for obstetrically related terms on the Internet. **STUDY DESIGN:** The Google and Yahoo search engines were used to search for the terms "cerebral palsy," "birth trauma," "shoulder dystocia," "forceps delivery," "epidural," and "cesarean section." The first page of results retrieved for these search terms was examined. Information regarding the organization or individuals sponsoring the websites was collected. Differences in sponsorship were investigated by using a chi(2) test. **RESULTS:** Sponsorship was significantly different between topics ( $P < .001$ ). Lawyers were the most common sponsors of websites retrieved by the terms cerebral palsy (52%), birth trauma (48%), and shoulder dystocia (43%). Only 3.6% of websites on the first page of results were created or sponsored by obstetrician-gynecologists. **CONCLUSION:** As the Internet becomes a frequently used source of health information, obstetrician-gynecologists should consider how this forum can be more effectively used to disseminate educational information.

PMID: 18538152 [PubMed - in process]

**8: Best Pract Res Clin Endocrinol Metab. 2008 Jun;22(3):477-88.**

**Effects of being born small for gestational age on long-term intellectual performance.**

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Size at birth has been associated repeatedly with increased risk of cardiovascular morbidity and mortal-

ity later in life. However, there is accumulating evidence to suggest an association between being born small for gestational age (SGA) and increased risk of lower intelligence, poor academic performance, low social competence and behavioural problems, compared with individuals born appropriate for gestational age. Crude neurological handicaps, such as cerebral palsy, are extremely rare in children born SGA at term. Such handicaps are more common in very premature children. However, there does appear to be an increase in the risk for non-severe neurological dysfunction in individuals born SGA. Intellectual performance is evaluated in young children in several different ways, including standardized tests such as Weschler's Intelligence Scale - Revised, and teachers and parents' reports. In adulthood, indirect variables such as education and occupation are used in addition to standardized tests. It may be possible to modify the effects of SGA on intellectual development by breast feeding the baby for more than 6 months. Nutrient-enriched formula does not have any advantages when it comes to intellectual development, and induces a risk of rapid weight gain and eventually overweight. Growth hormone treatment may also have some effect on intelligence quotient.

PMID: 18538287 [PubMed - in process]

**9: Behav Brain Res. 2008 Apr 20. [Epub ahead of print]**

**Techniques and devices to restore cognition.**

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Executive planning, the ability to direct and sustain attention, language and several types of memory may be compromised by conditions such as stroke, traumatic brain injury, cancer, autism, cerebral palsy and Alzheimer's disease. No medical devices are currently available to help restore these cognitive functions. Recent findings about the neurophysiology of these conditions in humans coupled with progress in engineering devices to treat refractory neurological conditions imply that the time has arrived to consider the design and evaluation of a new class of devices. Like their neuromotor counterparts, neurocognitive prostheses might sense or modulate neural function in a non-invasive manner or by means of implanted electrodes. In order to paint a vision for future device development, it is essential to first review what can be achieved using behavioral and external modulatory techniques. While non-invasive approaches might strengthen a patient's remaining intact cognitive abilities, neurocognitive prosthetics comprised of direct brain-computer interfaces could in theory physically reconstitute and augment the substrate of cognition itself.

PMID: 18539345 [PubMed - as supplied by publisher]

**10: Curr Opin Neurol. 2008 Apr;21(2):202-13.**

**Bibliography. Current world literature. Developmental disorders.**

[No authors listed]

Publication Types:  
Bibliography

PMID: 18317281 [PubMed - indexed for MEDLINE]

**11: Zhongguo Zhong Xi Yi Jie He Za Zhi. 2008 Apr;28(4):363-5.**

**Massage manipulation of supplementing marrow and kneading tendon in treating 30 children with spastic cerebral palsy [Article in Chinese]**

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**OBJECTIVE:** To observe the therapeutic effect of massage with manipulation of supplementing marrow and kneading tendon (SMKT) on spastic cerebral palsy (CP). **METHODS:** A total of 60 children with CP were randomly assigned to the treatment group and the control group equally. All were treated with rehabilitation training, but massage with SMKT was carried out additionally for those in the treatment group, five times every week and 3 months as a therapeutic course. Clinical efficacy was assessed adopting the gross motor function measurement (GMFM-66) and the revised Ashworth scale (MAS) before and after treatment. **RESULTS:** All children showed significant improvements in GMFM-66 after treatment. Compared with baseline, the improvement was statistically significant ( $P < 0.01$ ). Significant difference was also found between the 2 groups in MAS and in GMFM scores after treatment ( $P < 0.05$ ). **CONCLUSION:** Massage with SMKT manipulation shows a better effect than rehabilitation training therapy alone in treating spastic CP.

Publication Types:  
English Abstract

PMID: 18543496 [PubMed - in process]

**12: Neuropsychologia. 2008 Feb 12;46(3):915-26. Epub 2007 Dec 27.**

**Modular structure of awareness for sensorimotor disorders: evidence from anosognosia for hemiplegia and anosognosia for hemianaesthesia.**

Spinazzola L, Pia L, Folegatti A, Marchetti C, Berti A.

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In the present paper, we shall review clinical evidence and theoretical models related to anosognosia for sensorimotor impairments that may help in understanding the normal processing underlying conscious self-awareness. The dissociations between anosognosia for hemiplegia and anosognosia for hemianaesthesia are considered to give important clinical evidence supporting the hypothesis that awareness of sensory and motor deficits depends on the functioning of discrete self-monitoring processes. We shall also present clinical and anatomical data on four single case reports of patients selectively affected by anosognosia for hemianaesthesia. The differences in the anatomical localization of lesions causing anosognosia for hemiplegia and anosognosia for hemianaesthesia are taken as evidence that cerebral circuits subserving these monitoring processes are located in separate brain areas, which may be involved both in the execution of primary functions and the emergence of awareness related to the monitoring of the same functions. The implications of these findings for the structure of conscious processes shall be also discussed.

Publication Types:  
Case Reports  
Research Support, Non-U.S. Gov't  
Review

PMID: 18281065 [PubMed - indexed for MEDLINE]

**13: Med Arh. 2008;62(1):53-5.**

**Mechanism of therapy effects by botulinum neurotoxin [Article in Bosnian]**

Alajbegović A, Alajbegović S, Resić H.

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Botulinum neurotoxin (BoNT) is produced by *Clostridium botulinum* as a complex of proteins containing the neurotoxin itself and other nontoxic proteins. Activation of the neurotoxin occurs upon proteolytic cleavage into the heavy and light chains. This di-chain moiety is essential for neurotoxin and each chain is playing a unique role; the heavy chain mediates neurospecific cell binding and entry, whereas the light chain, a protease, catalyzes the cleavage and inactivation of neuronal proteins that mediate neurotransmitter release. There are seven BoNT serotypes (A,B,C1,D,E,F, and G), all of which inhibit acetylcholine release, though their intracellular target proteins, the characteristics of their actions, and their potencies vary substantially. BoNT type A has been the most widely studied and applied serotype for therapeutic purposes. It has been a mainstay in the treatment of cervical dystonia, blepharospasm, and hemifacial spasm for years. BoNT has more recently emerged as an increasingly important therapeutic option in the clinical management of a broad array of conditions, including other focal dystonias, spasticity, cerebral palsy, equinovarus, gastrointestinal (GI) and urogenital disorders, hypersecretory disorders, facial lines due to hyperfunctional facial muscles and recently, musculoskeletal pain disorders and headache.

Publication Types:  
English Abstract

PMID: 18543757 [PubMed - in process]

**14: Med Arh. 2008;62(1):20-4.**

**Etiological factors in cerebral palsy in Prishtina region.**

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**OBJECTIVE:** To analyze the possible etiological factors, socio-economical characteristics, pregnancy and birth characteristics for Cerebral Palsy in region of Prishtina. **DESIGN:** Retrospective study. **SETTING:** National Institute of Public Health in Kosova. **METHOD:** Study was based in the data collected from two different questioners. Questioner for disabled persons and their families, (81), questioner with 150 women who have children with no disabilities. **RESULTS:** As possible etiological factors, we can name health problems before pregnancy 7.4%, complications during pregnancy 19.8% and during deliverance 37%. Although none genetically disorder was found to be more frequent in families that had similar disorders. According to the analysis of the socio-economical characteristics, considerable differences were found among mothers with children with cerebral palsy and those with healthy babies. These characteristics can be causing factors of cerebral palsy, especially low level of education of parents, high number of family members and children, bad living conditions and low family living standards. According to analysis of pregnancy and birth characteristics considerable differences were found among mothers of children suffering with cerebral palsy and those with healthy children and these factors can be causing factors, especially pregnancy and birth complications, rare visits to consulting institutions, deliverance without professional help, low weight of the newborn (premature birth and deliverance of older mothers). **CONCLUSION:** Possible etiological factors are: complicated birth and health related problems during and before the pregnancy. Other possible factors can be: poor education of parents, large number of family members and bad living conditions, low birth weight, birth in late ages, and very rare visits to the counseling services for pregnancy.

PMID: 18543749 [PubMed - in process]

**15: Redox Rep. 2008;13(3):117-22.**

**Oxidative stress and neurological disorders in relation to blood lead levels in children.**

Ahamed M, Fareed M, Kumar A, Siddiqui WA, Siddiqui MK.

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Oxidative stress plays a pivotal role in the pathogenesis of neurological disorders. Free radical generation appears to be the mode of lead toxicity. We evaluated the effects of blood lead levels on oxidative stress parameters in children suffering from neurological disorders. Thirty children (aged 3-12 years) with neurological disorders (cerebral palsy [n = 12], seizures [n = 11], and encephalopathy [n = 7]) were recruited in the study group. Sixty healthy children (aged 3-12 years) from similar socio-economic environments and not suffering from any chronic disease were taken as the controls. Blood lead levels and oxidant/antioxidant status were determined. Mean blood lead level was significantly higher while delta-aminolevulinic acid dehydratase (delta-ALAD) activity, a biomarker for lead exposure, was significantly lower in the study group as compared to the control group ( $P < 0.05$  for each). Malondialdehyde (MDA) levels, an end-product of lipid peroxidation, were significantly higher while the antioxidant glutathione (GSH) levels were significantly lower in the study group as compared to the control group ( $P < 0.05$  for each). Activities of the antioxidant enzymes superoxide dismutase (SOD) and catalase (CAT) were significantly higher in the study group than those of the control group ( $P < 0.05$  for each). There were significant negative correlations of blood lead levels with delta-ALAD ( $r = -0.35$ ;  $P < 0.05$ ) and GSH ( $r = -0.31$ ;  $P < 0.05$ ), and positive correlations with MDA ( $r = 0.37$ ;  $P < 0.05$ ), SOD ( $r = 0.53$ ;  $P < 0.05$ ), and CAT ( $r = 0.31$ ;  $P < 0.05$ ). In turn, delta-ALAD had significant negative correlations with MDA ( $r = -0.29$ ;  $P < 0.05$ ), SOD ( $r = -0.28$ ;  $P < 0.05$ ) and CAT ( $r = -0.34$ ;  $P < 0.05$ ), but positive correlation with GSH ( $r = 0.32$ ;  $P < 0.05$ ). Although a causal pathway can not be determined from the present study, our findings indicate lead-induced oxidative stress in blood of children with neurological disorders. Lead-induced oxidative stress as an underlying mechanism for neurological diseases in children warranted further investigation.

Publication Types:  
Research Support, Non-U.S. Gov't

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