

Monday 25 November 2013

Cerebral Palsy Alliance is delighted to bring you this free weekly bulletin of the latest published research into cerebral palsy.

Our organisation is committed to supporting cerebral palsy research worldwide - through information, education, collaboration and funding. This free weekly bulletin is just one of our activities. Please find out more at www.cpresearch.org.au

Professor Nadia Badawi

Macquarie Group Foundation Chair of Cerebral Palsy
PO Box 560, Darlinghurst, New South Wales 2010 Australia

Interventions and Management

1. Arch Phys Med Rehabil. 2013 Nov 12. pii: S0003-9993(13)01122-2. doi: 10.1016/j.apmr.2013.10.025. [Epub ahead of print]

Validity and Clinical Utility of Functional Assessments in Children with Cerebral Palsy.

Chrysagis N, Skordilis EK, Koutsouki D.

Department of Physical Therapy, TEI, Athens; Laboratory of Adapted Physical Activity/ Developmental & Physical Disabilities.

OBJECTIVE: To examine the validity and clinical utility of functional assessments (one-minute walk-OMW, ten-meter walk-TMW, time up and go-TUG, time up and down the stairs-TUDS, sit to stand-STS and lateral step up-LSU). Validity was established through the intercorrelation between GMFM - 88 scores (D & E) and the functional assessments. Clinical utility was examined through the: a) prediction of GMFM - 88 (D & E) and b) differences of adolescents classified at the GMFCS - E & R, Levels I to III, in the significant GMFM - 88 predictors. **DESIGN:** Cross - sectional study. **SETTING:** Four special schools for adolescents with physical disabilities. **PARTICIPANTS:** Through convenience sampling, thirty five adolescents with spastic tetraplegia and diplegia, at Levels I to III, were selected (age: M = 14.97 years, SD = 2.03). **INTERVENTION:** Not applicable. **MAIN OUTCOME MEASURES:** GMFM - 88 (D & E), OMW, TMW, TUG, TUDS, STS and LSU tests. Data were analyzed using Pearson intercorrelations, multiple regression analysis and MANOVA. **RESULTS:** Significant, moderate to high, intercorrelations were found. Three significant positive predictors emerged (OMW, TMW & LSU), with the following regression equation: $Y_{GMFM-88(D \& E)} = 5.708 + .402 \cdot X_{OMW} + .920 \cdot X_{LSU} + .404 \cdot X_{TMW}$. The MANOVA was significant ($\Lambda = .163$, $F = 14.732$, $p < .001$, $\eta^2 = .596$) and post hoc comparisons revealed significant differences across GMFCS Levels, in all by paired comparisons, for OMW and LSU. For TMW, significant differences were evident in the I vs. III and II vs. III comparisons. No significant differences were found in TMW between Levels I vs. II. **CONCLUSIONS:** These functional assessments (OMW, LSU and TMW) are simple to administer, quick, with low cost and user friendly. Although they may not substitute the golden standard (GMFM - 88), they may be used for a quick assessment of CP adolescents (Levels I - III), especially when time is limited either at school or during rehabilitation.

Copyright © 2013 American Congress of Rehabilitation Medicine.
Published by Elsevier Inc. All rights reserved.

[PMID: 24239880](https://pubmed.ncbi.nlm.nih.gov/24239880/) [PubMed - as supplied by publisher]

2. J Phys Ther Sci. 2013 Sep;25(9):1123-1127. Epub 2013 Oct 20.**Wii-based Balance Therapy to Improve Balance Function of Children with Cerebral Palsy: A Pilot Study.**

Tarakci D, Ozdincler AR, Tarakci E, Tutuncuoglu F, Ozmen M.

Program of Physiotherapy and Rehabilitation, Institute of Health Science, Istanbul University.

Purpose: Cerebral palsy is a sensorimotor disorder that affects the control of posture and movement. The Nintendo® Wii Fit offers an inexpensive, enjoyable, suitable alternative to more complex systems for children with cerebral palsy. The aim of this study was to investigate the efficacy of Wii-based balance therapy for children with ambulatory cerebral palsy. **Subjects:** This pilot study design included fourteen ambulatory patients with cerebral palsy (11 males, 3 females; mean age 12.07 ± 3.36 years). **Methods:** Balance functions before and after treatment were evaluated using one leg standing, the functional reach test, the timed up and go test, and the 6-minute walking test. The physiotherapist prescribed the Wii Fit activities, and supervised and supported the patients during the therapy sessions. Exercises were performed in a standardized program 2 times a week for 12 weeks. **Results:** Balance ability of every patient improved. Statistically significant improvements were found in all outcome measures after 12 weeks. **Conclusion:** The results suggest that the Nintendo® Wii Fit provides a safe, enjoyable, suitable and effective method that can be added to conventional treatments to improve the static balance of patients with cerebral palsy; however, further work is required.

[PMID: 24259928](#) [PubMed - as supplied by publisher] [Free PMC Article](#)

3. J Phys Ther Sci. 2013 Oct;25(10):1259-1263. Epub 2013 Nov 20.**Effect of Strength Training of Ankle Plantarflexors on Selective Voluntary Motor Control, Gait Parameters, and Gross Motor Function of Children with Cerebral Palsy.**

Jung JW, Her JG, Ko J.

Department of Rehabilitation Therapy, Graduate School of Hallym University, Republic of Korea.

Purpose: The purpose of this study was to investigate the effect of ankle plantarflexor strength training on selective voluntary motor control, gait parameters, and gross motor function of children with cerebral palsy (CP), focusing on changes in the strength and muscle activity of the ankle plantarflexors. **Methods:** Six children aged between 4 and 10 years with CP participated in a 6 week strengthening program. The subjects were evaluated before and after the intervention in terms of ankle plantarflexor strength, muscle activity, gait velocity, cadence, step length, and D (standing) and E (walking, running, and jumping) dimensions of the Gross Motor Function Measure (GMFM). The data were analyzed using the non-parametric Wilcoxon signed-rank test. **Results:** The strength of the plantarflexors increased in the majority of subjects. Significant and clinically meaningful post-intervention improvements in subject's gait velocity, cadence, and step length were found. **Conclusion:** The controlled ankle plantarflexor strengthening program may lead to improvements in strength and spatiotemporal gait parameters of children with CP.

[PMID: 24259771](#) [PubMed - as supplied by publisher] [Free PMC Article](#)

4. J Phys Ther Sci. 2013 Aug;25(8):947-951. Epub 2013 Sep 20.**Clinical Usefulness of Child-centered Task-oriented Training on Balance Ability in Cerebral Palsy.**

Kim Y, Lee BH.

Department of Physical Therapy, College of Health Science, Sahmyook University.

Purpose: This study was conducted in order to investigate the effects of child-centered task-oriented training on balance ability in patients with cerebral palsy. **Subjects:** Twenty-six subjects with cerebral palsy were recruited. **Methods:** This study applied a child-centered task-oriented training program to 26 subjects during a period of 15 weeks, with two 40-minute sessions per week. The Pediatric Berg Balance Scale (PBS) was used for measurement

of the effect of child-centered task-oriented training. Results: Balance ability showed a significant change after the intervention in age groups younger than nine, between 10 and 12, and older than 13. In addition, a significant difference in balance ability was observed in the spastic type, athetoid type, diplegia, and quadriplegia transport groups, including an independent walking group, a group of subjects who used walkers, and a group of subjects who used wheelchairs. Conclusion: Although we suggest conduct of a follow-up study on child-centered task-oriented training, the results of this study showed improved balance ability in patients with cerebral palsy. Therefore, these results recommend a variety of applications in clinical trials of conservative therapeutic methods.

[PMID: 24259891](#) [PubMed - as supplied by publisher] [Free PMC Article](#)

5. PM R. 2013 Nov;5(11):957-63. doi: 10.1016/j.pmrj.2013.05.015.

Neuromuscular scoliosis.

Allam AM, Schwabe AL.

Department of Physical Medicine and Rehabilitation, Baylor College of Medicine/UT Houston PM&R Alliance 1333 Moursund, Ste A-220, Houston TX, 77030(□). Electronic address: anand.m.allam@uth.tmc.edu.

The purpose of this focused review is to provide an overview of neuromuscular scoliosis from the perspective of the rehabilitation physician. Scoliosis is a common consequence of neuromuscular diseases, including central nervous system disorders such as cerebral palsy and spinal cord injury; motor neuron disorders, for example, spinal muscular atrophy; muscle fiber disorders, for example, Duchenne muscular dystrophy; multifactorial disorders, for example, spina bifida; and many other neuropathic and myopathic conditions. Unlike adolescent idiopathic scoliosis, which is the most common form of spinal deformity, neuromuscular scoliosis is more severe and more progressive, and is associated with more morbidity. Factors that contribute to this spinal deformity include asymmetric paraplegia, imbalance of mechanical forces, intraspinal and congenital anomalies of the spine, altered sensory feedback, and abnormal posture via central pathways. Spinal deformity combined with limitations due to an underlying neuromuscular condition lead to significant physiologic impairments that affect limb movement, cardiopulmonary function, gait, standing, sitting, balance, trunk stability, bimanual activities, activities of daily living, and pain, as well as concerns with self-image and social interactions. Evaluation and management of this population requires understanding of disease progression, pulmonary status, functional limitations, indications for conservative and surgical interventions, and social considerations.

Copyright © 2013 American Academy of Physical Medicine and Rehabilitation. Published by Elsevier Inc. All rights reserved.

[PMID: 24247014](#) [PubMed - in process]

6. Pediatr Phys Ther. 2013 Nov 20. [Epub ahead of print]

Modified Toy Cars for Mobility and Socialization: Case Report of a Child With Cerebral Palsy.

Huang HH, Ragonesi CB, Stoner T, Peffley T, Galloway JC.

Department of Occupational Therapy and Graduate Institute of Behavioral Sciences (Dr Huang), Chang Gung University, Kwei-Shan Tao-Yuan, Taiwan; Infant Behavior Lab, Department of Physical Therapy (Ms Peffley and Drs Ragonesi, Stoner, and Galloway) and Biomechanics and Movement Sciences Program (Drs Ragonesi and Galloway), University of Delaware, Newark, Delaware.

PURPOSE: Children with cerebral palsy have limited opportunities to explore their physical and social environment. The purpose of this study was to determine the feasibility of using a "ride-on toy car" as a readily available, low-cost, fun, and functional option for children with special needs. **METHODS:** Brenden, a 21-month-old child, was provided a modified ride-on toy car for a 15-week study period divided up into a 1-week baseline, 12-week intervention, and 2-week postintervention. We coded mobility and socialization measures from video recordings. **RESULTS:** Brenden was more mobile and had more vocalizations during the 12-week intervention. **CONCLUSIONS:** Modified toy cars have serious potential to be a fun and functional power mobility option for children with special needs. The opportunity now exists to quantify several effects, including peer socialization,

cognitive measures, and body structure/function goals involving neural, muscular, and skeletal physiology. Group study is required to formally test these findings.

[PMID: 24263247](#) [PubMed - as supplied by publisher]

7. J Phys Ther Sci. 2013 May;25(5):619-622. Epub 2013 Jun 29.

Relationships between Physical and Cognitive Functioning and Activities of Daily Living in Children with Cerebral Palsy.

Song CS.

Department of Occupational Therapy, Chungnam Provincial Cheongyang College.

Purpose: The purpose of the present study was to evaluate the relationship between physical function, cognitive function, and activities of daily living in children with cerebral palsy. **Subjects:** Sixty-eight children who had been diagnosed with cerebral palsy and have participated in inpatient or outpatient rehabilitation programs were enrolled in the present study. We used 3 clinical assessments: the Gross Motor Function Measure (GMFM), the Bayley Infant Development Screening Test-II (BSID-II), and the Wee Functional Independence Measure (WeeFIM). **Results:** The GMFM was positively correlated with the BSID-II motor scale and the BSID-II cognitive scale, but not with the WeeFIM scores. The BSID-II motor scale was significantly correlated with the GMFM and BSID-II cognitive scale, but not with the WeeFIM. **Conclusion:** The results of this study provide evidence of the necessity of including cognitive and physical impairments in the examination and evaluation of children with cerebral palsy in research and clinical settings.

[PMID: 24259815](#) [PubMed - as supplied by publisher] [Free PMC Article](#)

8. Am J Phys Med Rehabil. 2013 Dec;92(12):1084-94. doi: 10.1097/PHM.0b013e31829e780e.

Telehealth weight management intervention for adults with physical disabilities: a randomized controlled trial.

Rimmer JH, Wang E, Pellegrini CA, Lullo C, Gerber BS.

From the University of Alabama at Birmingham and Lakeshore Foundation (JHR); University of Illinois at Chicago (EW, CL); Northwestern University, Chicago, Illinois (CAP); and Center for Management of Complex Chronic Care, Jesse Brown Veterans Affairs Medical Center, Chicago, Illinois (BSG).

OBJECTIVE: Weight reduction programs are not generally designed or adapted for people with physical disabilities. This study examined the effect of a 9-months remote, telephone-based weight management program for people with physical disabilities using a Web-based system (Personalized Online Weight and Exercise Response System [POWERS]). **DESIGN:** A total of 102 participants (mean \pm SD age, 46.5 \pm 12.7 yrs; body mass index, 32.0 \pm 5.8 kg/m) with a physical disability (spinal cord injury, multiple sclerosis, spina bifida, cerebral palsy, stroke, or lupus) were randomized to one of three conditions: physical activity only (POWERS), physical activity plus nutrition (POWERS), and control. The POWERS group received a physical activity tool kit and regular coaching telephone calls. The POWERS group received an intervention identical to that of the POWERS group plus nutritional information. The control group received the physical activity tool kit and self-guided health promotion resources at the completion of the trial but no coaching. **RESULTS:** Postintervention differences in body weight were found between the groups. There was a significant group \times time interaction ($P < 0.01$) in postintervention body weight, with both the POWERS and POWERS groups demonstrating greater reduction in body weight compared with the control group (POWERS: -2.1 \pm 5.5 kg, -2.4 \pm -5.9%; POWERS: -0.5 \pm 5.0 kg, -0.6 \pm 4.3%; control: +2.6 \pm 5.3 kg, 3.1 \pm 7.4%). **CONCLUSIONS:** A low-cost telephone intervention supported with a Web-based remote coaching tool (POWERS) can be an effective strategy for assisting overweight adults with physical disabilities in maintaining or reducing their body weight.

[PMID: 24257266](#) [PubMed - in process]

9. J Pediatr Rehabil Med. 2013 Jan 1;6(3):121-7. doi: 10.3233/PRM-130252.**Measuring quality of life of Finnish children with cerebral palsy.**

Böling S, Tarja V, Helena M, Wivi F, Ilona AR, Leena H.

Neuropediatric Unit of Turku Health Care and Social Services, Turku, Finland.

PURPOSE: The purpose of the study was to examine the quality of life (QOL) of Finnish children with cerebral palsy (CP), both from the child's and the caregiver's point of view, and to analyze the effect of background factors on QOL. **METHODS:** This study is a part of a national CP research project. The study is based on validated questionnaires measuring QOL (CP QOL-Child). 128~questionnaires were sent to caregivers who had a 4 to 12 year-old child with CP. Children between 9 and 12 years were asked to fill in the child-self-report version. **RESULTS:** Responses were obtained from 78 guardians and 27 children, with a response rate of 61% in both cases. The overall QOL was reported to be good in Finnish children with CP. The correlation of QOL scores between the caregivers and children was good ($n=25$, $r=0.687$, $p<0.001$), except in the domain of pain and the impact of disability. Parental estimates were consistently lower in all domains. Regarding the background factors, all the functional classification scales were associated inversely with QOL in both groups. **CONCLUSION:** Despite the good overall QOL, CP is perceived to limit participation. Pain impairs QOL, and pain symptoms should be systematically considered at every follow-up visit.

[PMID: 24240833](#) [PubMed - in process]

10. Res Dev Disabil. 2013 Nov 14;35(1):99-109. doi: 10.1016/j.ridd.2013.10.004. [Epub ahead of print]**The determinants of self-determined behaviors of young children with cerebral palsy.**

Chang HJ, Chiarello LA, Palisano RJ, Orlin MN, Bundy A, Gracely EJ.

Drexel University, Department of Physical Therapy and Rehabilitation Sciences, Philadelphia, PA, USA. Electronic address: hui.chang@me.com.

The purpose of this study was to identify determinants of self-determined behaviors of young children with cerebral palsy. The participants were 429 children (56% boys, 18-60 months) and their parents. Structural equation modeling was used to test two models of self-determined behaviors, one for children with walking mobility (Gross Motor Function Classification System, GMFCS levels I-II) and the other for children with limited self-mobility (GMFCS levels III-V). Cognitive-behavioral problems and the extent family supports their child's self-determined behaviors explained 60% of the variance in self-determined behaviors of children with walking mobility. Cognitive-behavioral problems, playfulness, and the extent family supports their child's self-determined behaviors explained 68% of the variance in self-determined behaviors of children with limited self-mobility. The less the child's cognitive-behavioral problems affect daily activities ($p<.05$) and the more the extent family supports their child's self-determined behaviors ($p<.05$), the more effective the child's self-determined behaviors. Playfulness only had an effect on self-determined behaviors of children with limited self-mobility ($p<.05$). Service providers are encouraged to assess and support children's daily functioning in cognition, communication, and emotional/behavioral regulation, playfulness, and family strategies in providing opportunity for children to practice self-determined behaviors.

Copyright © 2013 Elsevier Ltd. All rights reserved.

[PMID: 24240020](#) [PubMed - as supplied by publisher]

11. J Phys Ther Sci. 2013 Oct;25(10):1339-1342. Epub 2013 Nov 20.**Effect of Social Support on Parenting Stress of Korean Mothers of Children with Cerebral Palsy.**

Jeong YG, Jeong YJ, Bang JA.

Rehabilitation Medicine, Dongguk University Ilsan Medical Center, Republic of Korea.

Purpose: This study investigated the effect of perceived social support on the parenting stress of mothers who have children with cerebral palsy (CP). **Methods:** This study was conducted using surveys, literature review, and interviews. Survey data were collected from 181 mothers of children (under 18 years of age) with CP. **Results:** Level of disability, mother's health status and social support were significant predictors of the parenting stress of mothers. **Conclusion:** We have to comprehend and share the psychological and physical affliction of mothers having much difficulty nurturing children with CP. Also, the government should take social responsibility for the upbringing of their children, developing back-up programs for mothers and making them comprehensively available to support the psychological and physical health of mothers of children with CP.

[PMID: 24259789](#) [PubMed - as supplied by publisher] [Free PMC Article](#)

Prevention and Cure

12. J Neonatal Perinatal Med. 2013 Jan 1;6(1):83-8. doi: 10.3233/NPM-1364512.

Neurological impairment in a surviving twin following intrauterine fetal demise of the co-twin: A case study.

Forrester KR, Keegan KM, Schmidt JW.

Division of Newborn Medicine, Department of Pediatrics, Creighton University School of Medicine, Omaha, NE, USA.

It has been established that twin pregnancies are at an increased risk for complications, including the risk of morbidity or mortality for one or both of the infants. Cerebral palsy and other associated neurological deficits also occur at higher rates in twin pregnancies [1]. This report examines two cases of intrauterine demise of one twin with subsequent survival of the co-twin. In both cases, the surviving infant suffered significant neurological sequelae. Impairments observed in these two cases include multicystic encephalomalacia and periventricular leukomalacia as well as the subsequent development of cerebral palsy. This case study explores the predisposing factors, incidence, pathophysiology, consequences, and future research implications of these findings.

[PMID: 24246463](#) [PubMed - in process]

13. J Neurosci Rural Pract. 2013 Jul;4(3):288-91. doi: 10.4103/0976-3147.118781.

Clinical profile of children with developmental delay and microcephaly.

Aggarwal A, Mittal H, Patil R, Debnath S, Rai A.

Department of Pediatrics, University College of Medical Sciences and Guru Teg Bahadur Hospital, New Delhi, India.

AIM: To study the profile of children with developmental delay and microcephaly. **MATERIALS AND METHODS:** Children attending child development clinic with developmental delay were evaluated as per protocol. Z scores of head circumference were calculated using WHO charts. Clinical, radiological and etiological profile of those with microcephaly and those without was compared. **RESULTS:** Of the 414 children with developmental delay 231 had microcephaly (z score \leq -3). Mean age of children with microcephaly was 35.1 ± 27.9 months (range 4-184), males (72.7%). Comorbidities were epilepsy (42.9%), visual abnormality (26.4%), hearing abnormality (16.9%). Mean DQ was 29.75 ± 17.8 in those with microcephaly was significantly lower compared to the rest ($P = 0.002$). Secondary microcephaly was associated with cerebral palsy in 69.7%. Other causes were congenital infections (4), inborn error of metabolism (3), post-meningoencephalitis (5), malformations (12), and syndromic (13). Neuroimaging was done in 118 (51.1%) cases of which 104 (88.1%) were abnormal. On comparison children with microcephaly had more epilepsy, lower developmental quotient, vision abnormalities findings as compared to normocephalic children with developmental delay ($P > 0.05$). **CONCLUSION:** Microcephaly was associated with lower, DQ, higher comorbidities in children with developmental delay. Spastic CP is commonly associated with microcephaly.

[PMID: 24250161](#) [PubMed] [PMCID: PMC3821414](#) [Free PMC Article](#)

14. J Obstet Gynaecol Res. 2013 Nov 18. doi: 10.1111/jog.12224. [Epub ahead of print]**Amnioinfusion before 26 weeks' gestation for severe fetal growth restriction with oligohydramnios: Preliminary pilot study.**

Takahashi Y, Iwagaki S, Chiaki R, Iwasa T, Takenaka M, Kawabata I, Itoh M.

Department of Fetal-Maternal Medicine, Nagara Medical Center, Gifu, Japan.

AIM: The prognosis for severe fetal growth restriction (FGR) with severe oligohydramnios before 26 weeks' gestation (WG) is currently poor; furthermore, its management is controversial. We report the innovative new management of FGR, such as therapeutic amnioinfusion and tocolysis. MATERIAL AND METHODS: For FGR and severe oligohydramnios before 26 WG complicated with absent or reversed umbilical artery end-diastolic flow velocity and/or deceleration by ultrasonography, we performed transabdominal amnioinfusion with tocolysis. Cases with multiple anomalies were excluded. Survival rate and long-term prognosis were analyzed. RESULTS: Among 570 FGR cases, 18 were included in the study. Mean diagnosis and delivery were at 22.6 ± 2.0 and 28.7 ± 3.3 WG. Median birthweight was 625 g (-4.2 standard deviation). Final survival rate was 11/13 (85%). There were five fetal deaths. In seven cases, oligohydramnios improved. Growth was detected in 10/18 fetuses. Furthermore, 8/8 decelerations, 4/12 cases of reversed umbilical artery end-diastolic flow velocity, 7/14 cases of brain-sparing effect, and 6/13 venous Doppler abnormalities were improved. When we detected umbilical cord compression, 8/10 cases were rescued. Eleven infants were followed up for an average of 5 years; one case of cerebral palsy with normal development and 10 cases with intact motor functions without major neurological handicap were confirmed. CONCLUSIONS: In cases of extremely severe FGR before 26 WG with oligohydramnios and circulatory failure, amnioinfusion might be a promising, innovative tool.

© 2013 The Authors. Journal of Obstetrics and Gynaecology Research

© 2013 Japan Society of Obstetrics and Gynecology.

[PMID: 24245667](#) [PubMed - as supplied by publisher]

15. Res Dev Disabil. 2013 Nov 15. pii: S0891-4222(13)00444-7. doi: 10.1016/j.ridd.2013.10.007. [Epub ahead of print]**The relationship between multiple developmental difficulties in very low birth weight children at 3½ years of age and the need for learning support at 5 years of age.**

Verkerk G, Jeukens-Visser M, van Wassenaeer-Leemhuis A, Kok J, Nollet F.

Department of Rehabilitation, Academic Medical Centre, University of Amsterdam, Amsterdam, The Netherlands. Electronic address: g.j.verkerk@amc.uva.nl.

This study investigated whether multiple developmental difficulties are more frequent in very low birth weight (VLBW) children than in those born full term. The association between multiple developmental difficulties assessed at 3½ years of age and educational provision for the child at 5½ years was also investigated, with 'educational provision' referring to the curriculum, school placement and the level of learning support. There were 143 VLBW children without cerebral palsy (CP) and 41 term-born peers assessed at 3½ years of age. The assessment included 6 measures of development: word comprehension, visual motor integration, visual perception, motor coordination, executive functioning and behaviour. Educational provision was determined at age 5½ years. A mildly abnormal score (score <1 standard deviation) was considered to indicate developmental difficulty. Scores from the six measures of development were analysed to determine the difficulty frequency and the presence of multiple difficulties (>1 difficulty score) in each child. This study showed that at 3½ years of age, the VLBW children had significantly more difficulty with motor coordination than their term-born peers. In addition, 27% of the VLBW children had multiple difficulties compared to 10% in the term-born group. Multiple logistic regression analyses showed that of the difficulties, impaired motor coordination was most strongly associated with the requirement for learning support two years later. Regression analyses showed that having multiple difficulties was significantly associated with the need for learning support (Odds Ratio of 3.4 (95% CI: 1.5-7.8)). These results show that the presence of multiple difficulties in a VLBW child of preschool age, can impact the child's educational provision two years later.

Copyright © 2013 Elsevier Ltd. All rights reserved.

[PMID: 24246854](#) [PubMed - as supplied by publisher]

16. J Pediatr Rehabil Med. 2013 Jan 1;6(3):185-7. doi: 10.3233/PRM-130250.

Invited commentary: Motor function outcome in postnatal insult-related cerebral palsy.

Rosenbaum P.

CanChild Centre for Childhood Disability Research, IAHS Building, Room 408, 1400 Main Street West, Hamilton ON L8S 1C7, Canada Tel.: +1 905 525 9140, ext 27834; Fax: +1 905 524 0069; E-mail: rosenbau@mcmaster.ca.

[PMID: 24240840](#) [PubMed - in process]

17. J Pediatr Rehabil Med. 2013 Jan 1;6(3):181-4. doi: 10.3233/PRM-130251.

Motor function outcome in postnatal insult-related cerebral palsy.

Fauzi AA, Mustafah NM, Zohdi WN.

Department of Rehabilitation Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia.

INTRODUCTION: The Gross Motor Function Classification System (GMFCS) was developed to establish uniform communication between healthcare providers, patients, and the patients' families. It is also used to prognosticate the outcome of motor function. Based on previous reports, prognostication of ambulation status in cerebral palsy is based on the motor development curve, which shows a plateau at a certain known age. **CASE REPORT:** This report illustrates the case of a boy with spastic triplegic cerebral palsy secondary to postnatal insult at early childhood. The patient was noted to have tremendous progressive improvement in his GMFCS level beyond 7 years old: from level IV at 4 years old to level II at 9 years old. **CONCLUSION:** Prognostication of ambulation in cerebral palsy based on the motor development curve provides a basis for physicians to predict motor function outcome and plan appropriate intervention. This case report shows that other important factors need to be considered in the clinical evaluation before rendering the prognostication of motor function outcome, including environmental factors as well as the etiology of cerebral palsy, for which special consideration should be given in cases of postnatal insult-related cerebral palsy.

[PMID: 24240839](#) [PubMed - in process]

Subscribe to CP Research News

To subscribe to this research bulletin, please complete the online form at www.cpresearch.org/subscribe/researchnews You can bookmark this form on the home screen of your smart phone and also email the link to a friend.

To unsubscribe, please email researchnews@cerebralpalsy.org.au with 'Unsubscribe' in the subject line, and your name and email address in the body of the email.