

used to predict sustained clinical response and monitor gut health in infants.

URL: [www.pediatrics.org/cgi/doi/10.1542/peds.2014-3330H](http://www.pediatrics.org/cgi/doi/10.1542/peds.2014-3330H)

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## **A Systematic Review of Computer-Based Remedial Programs for Primary Schoolchildren Diagnosed With Dyslexia: Results From Medline**

**BACKGROUND AND OBJECTIVE:** Dyslexia affects up to 15% of children and is the most prevalent learning disability. With information technology devices being common in the primary school classroom, advances in computer-based remedial programs offer potential benefits in helping dyslexic children improve their reading skills. However, a previous systematic review (Strong et al 2010) found that Fast ForWord, a commonly used computer-based program, gave no extra benefit. The objective was to determine whether computer-based programs provide significant benefits beyond traditional remedial programs in dyslexic primary schoolchildren.

**METHODS:** A systematic review was designed and conducted by using items from the Preferred Reporting Items for Systematic Reviews and Meta-Analyses statement. Medline was searched in July 2014 for controlled trials of computer-based programs involving primary schoolchildren aged 6 to 12 years, with no restriction on publication date or language.

**RESULTS:** After screening titles, abstracts, and full articles using preestablished inclusion and exclusion criteria, we included 6 studies in the review. The studies involved 605 children and were conducted in the United States (3), Finland (1), France (1), and the Netherlands (1) between 2008 and 2013. The studies were heterogeneous, studying various programs and therefore precluding meta-analysis. Two studies included Fast ForWord, and both studies showed no significant benefit. The Finnish study tested their self-developed software, GraphoGame, and found significant benefits in all tested outcomes in the study group. The French group also tested a self-developed computer-based program (developed by Magnan et al 2004) and found that the experimental group progressed significantly more than the control group in all subsets of reading tests. The Dutch study also showed significant results of their computer-based program, with the study group achieving the reading ability of nondyslexic children. Another US group used 2 computer-based programs (RWT, Herron 1995, and LIPS, Lindamood and Lindamood 1998) in their study. They found that the experimental group gained significant progress compared with the control group.

However, the computer-based programs were supplementary to teacher-led instruction, and the study did not provide a specific control for the computer-based programs.

**CONCLUSIONS:** Although there are studies suggesting that computer-based programs offer benefits to dyslexic schoolchildren beyond traditional interventions, the evidence is far from conclusive. More controlled trials are needed to assess effectiveness of computer-based programs. Fundamentally, a more coordinated effort among researchers is needed to develop effective computer-based programs to assist dyslexic children.

URL: [www.pediatrics.org/cgi/doi/10.1542/peds.2014-3330I](http://www.pediatrics.org/cgi/doi/10.1542/peds.2014-3330I)

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## **The Effect of a Modular Education Program Related to Children With Epilepsy and Their Parents on Disease Management**

**BACKGROUND AND OBJECTIVE:** Epilepsy is chronic neurologic disease and affects both the child with epilepsy and his or her family. We conducted a randomized controlled trial to evaluate the effect of a modular education program on disease management for children with epilepsy and their parents.

**METHODS:** This study was conducted at the Child Neurology Polyclinic of Akdeniz University Hospital in Turkey between February 2014 and June 2014. For both experimental ( $n = 42$ ) and control ( $n = 50$ ) groups, children 7 to 18 years old with epilepsy and their parents were included in the study. Both parents and children provided informed consent. The content of the modular education program used in the study was developed as a result of an extensive literature review. The intervention was given to children with epilepsy and their parents through interactive teaching methods. Before and after the program, data related to the children in experimental and control groups were collected by a researcher using the Epilepsy Knowledge Test for Children in face-to-face interviews. Data for parents were collected on a family information form.

**RESULTS:** After the modular education program, mean scores on the knowledge test increased in the children and their parents in the experimental group and decreased in the children in the control group. The differences between the mean scores of these groups were statistically significant ( $P < .001$ ). Also, after the modular education program, the children and their parents interviewed in the experimental

group made more positive statements about the child's illness.

**CONCLUSIONS:** Consistent and regular education through interactive teaching methods improves the quality of care for children with epilepsy.

URL: [www.pediatrics.org/cgi/doi/10.1542/peds.2014-3330J](http://www.pediatrics.org/cgi/doi/10.1542/peds.2014-3330J)

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### Classification and Risk Factors for Cerebral Palsy in the Korle Bu Teaching Hospital, Accra: A Case-Control Study

**BACKGROUND AND OBJECTIVES:** Cerebral palsy (CP) is a lifelong neurodevelopmental condition caused by injury to the developing fetal or infant brain. In developed countries 75% to 80% of cases are as a result of prenatal brain injury. Data from developing countries are limited; however, a higher proportion of affected children may have perinatal or postnatal injury. The objectives were to classify children with CP attending a neurodevelopmental clinic in Accra into clinical subtypes, determine the prevalence of associated impairments, and identify risk factors for CP among the study population.

**METHODS:** Prenatal, perinatal, and postnatal events were compared between 142 children with CP and 142 age- and gender-matched controls. We assessed clinical subtypes by using the Surveillance of Cerebral Palsy in Europe classification system and evaluated associated impairments. Risk factors were expressed as odds ratios (ORs) with 95% confidence intervals, and a multivariate logistic regression model was used.

**RESULTS:** Bilateral spastic (60.6%) and dyskinetic CP (20.4%) were the most common clinical subtypes, followed by unilateral spastic CP (10.6%). The prevalence rates of epilepsy and visual and hearing impairments were 40.1%, 23.2%, and 9.9%, respectively. Factors associated with an elevated risk for CP were severe neonatal hyperbilirubinemia (OR = 43.94,  $P < .0001$ ), neonatal seizures (OR = 32.81,  $P = .001$ ), birth asphyxia (OR = 6.69,  $P = .027$ ), irregular menstrual cycle (OR = 4.58,  $P = .021$ ), prematurity (OR = 3.45,  $P = .008$ ), and neonatal sepsis (OR = 2.83,  $P = .020$ ).

**CONCLUSIONS:** The clinical spectrum of CP in this study cohort differs from that of developed countries with a high prevalence of dyskinetic CP. Severe neonatal hyperbilirubinemia resulting in dyskinetic CP was the most significant and preventable risk factor for CP in this study population.

URL: [www.pediatrics.org/cgi/doi/10.1542/peds.2014-3330K](http://www.pediatrics.org/cgi/doi/10.1542/peds.2014-3330K)

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### Comparison of Polythene Occlusive Skin Wrapping With Routine Cloth Wrapping in Reducing Heat Loss During Transportation in Preterm Neonates (<34 Weeks) After Delivery: Randomized Control Trial

**BACKGROUND AND OBJECTIVE:** Preterm neonates are most vulnerable to hypothermia, especially in the first hour after birth, during which they are transported to the NICU. Transport incubators are not available in resource-poor settings, and temperature management remains a challenge. The goal of this study was to determine the efficiency of polyethylene occlusive skin wrapping versus routine cloth wrapping during intrahospital transportation after birth on the incidence of hypothermia in preterm neonates (<34 weeks) within 24 hours of life.

**METHODS:** Preterm neonates (<34 weeks) were randomized into groups receiving either polyethylene occlusive skin wrapping (plastic group) or routine cloth wrapping (control group). Axillary temperature was recorded by using a digital thermometer in degrees centigrade at baseline (just after resuscitation), every 5 minutes in the first hour, and at 2, 3, 4, 5, 6, 12, and 24 hours of life. Interim analysis is presented.

**RESULTS:** There were 50 neonates in the plastic group and 35 in the control group. A total of 54 (63.5%) were admitted to the NICU, 10 (11.8%) received intermediate care, and 21 (24.7%) received routine care. The mean  $\pm$  SD birth weight of the study population was 1663.76  $\pm$  393.49 g (minimum: 840 g; maximum: 2300 g). Forty-five (52.9%) infants required ventilator support. Mean temperature was significantly higher in the plastic group for most time intervals. The average temperature in the plastic group increased by 0.2 degree, and it decreased by 0.06 degree in the control group during intrahospital transfer. Good thermal control was achieved and maintained in ~10 to 15 minutes for the plastic group versus 35 to 40 minutes for the control group. The incidence of mild hypothermia (29 [82.9%] vs 29 [58.0%];  $P = .015$ ), as well as moderate hypothermia (27 [77.1%] vs 18 [36.0%];  $P < .001$ ), was higher in the control group. There was only 1 case of severe hypothermia, which occurred in the plastic group in a neonate weighing 840 g at birth.

**CONCLUSIONS:** Neonates wrapped in polyethylene occlusive covering achieved rapid thermal control and maintained that control compared with infants wrapped in cloths. They also had a decreased incidence of hypothermia for the initial 24 hours of life. Polyethylene occlusive skin wrapping is an inexpensive, effective, and feasible way of thermoregulation. Further research is needed to establish it at scale.

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*Pediatrics* 2015;135;S6

DOI: 10.1542/peds.2014-3330J

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DOI: 10.1542/peds.2014-3330J

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