# Cerebral palsy research news

Monday 20 April 2026

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## Interventions and Management

**1.Triceps surae muscle architecture in ambulant children with cerebral palsy: architectural adaptations vary between children and muscles**

Bart Bolsterlee, Brian V Y Chow, Suzanne Davies, Catherine Morgan, Caroline D Rae, David I Warton, Iona Novak, Ann Lancaster, Gordana C Popovic, Mahsa Seydi, Claudia Y Rizzo, Iain K Ball, Robert D Herbert

Journal of Biomechanics. 2026 Apr 10; Online ahead of print

Abstract
Many children with cerebral palsy (CP) have muscles that are smaller than those of their typically developing (TD) peers, but it is largely unknown to what extent this is due to reduced longitudinal growth (i.e., shorter muscle fascicles) or transverse growth (i.e., reduced cross-sectional area of muscle fibres). Here, we use anatomical and diffusion-weighted magnetic resonance imaging to measure physiological cross-sectional areas (PCSA), fascicle lengths and pennation angles of triceps surae muscles of 69 children with CP aged 5 to 18 years. Comparison with reference values from 195 typically developing children showed that triceps surae muscles of children with CP usually had both smaller PCSAs and shorter fascicles, indicating that both longitudinal and transverse growth were impaired. However, the contribution of longitudinal and transverse growth to reduced volumes varied between muscles. In the soleus muscle of children with CP, PCSA was relatively preserved (mean CP/TD ratio 0.88 and 0.97 for age-matched typically developing boys and girls, respectively) while fascicles were substantially shorter (boys: 0.74, girls: 0.76). In the medial gastrocnemius muscle, fascicle lengths were relatively preserved (boys: 0.89, girls: 0.94) while PCSAs were substantially smaller (boys: 0.73, girls: 0.72). These observations suggest the soleus muscle adapts primarily to preserve maximum force-generating capacity at the cost of operating length and velocity range, whilst the medial gastrocnemius muscle adapts to preserve operating range at the cost of force-generating capacity. Thus, architectural adaptations in children with CP typically vary between synergistic muscles.
PMID: 41996992

**2.Biomechanical and functional outcomes of high-burden and low-burden multilevel surgery in young people with cerebral palsy**

No authors listed

Developmental Medicine & Child Neurology. 2026 Apr 17; Online ahead of print

Abstract
No abstract available
PMID: 41996264

**3.Individualized 3D Planning for Hip Reconstruction in Cerebral Palsy: Study Protocol**

Britta K Krautwurst, Thomas Dreher, Franziska L Hatt, Bastian Sigrist, Tobias Götschi, Domenic Grisch

Journal of Clinical Medicine. 2026 Mar 30

Background: In children with cerebral palsy, acetabular deficiencies may contribute to hip subluxation and dislocation. Hip reconstruction surgery commonly includes acetabuloplasty, but planning is often based on radiographs alone. This study compares conventional hip reconstruction with a 3D-guided technique using individualized preoperative planning and 3D-printed guides. Methods: This randomized controlled trial evaluates imaging-based parameters before and after surgery using computed tomography. One hip is treated with individualized 3D-guided planning and the other with a conventional approach. Patients aged 4 to 18 years with bilateral cerebral palsy and significant hip migration are included. Retrospective components reproduce and validate three-dimensional acetabular indices and develop age-adjusted reference data. Conclusions: Improved precision through individualized 3D planning may have meaningful clinical implications for joint congruency, load distribution, pain, and mobility outcomes.
PMID: 41976937

**4.Effects of an intensive therapy on the precision grip control while walking down a step in children with unilateral cerebral palsy: a self-controlled study**

Daniela Ebner-Karestinos, Rodrigo Araneda, Geoffroy Saussez, Carlyne Arnould, Jean-Louis Thonnard, Yannick Bleyenheuft

Experimental Brain Research. 2026 Apr 13

Abstract
No abstract available
PMID: 41973125

**5.Environmental supportiveness, physical activity, and sedentary time in children with cerebral palsy**

No authors listed

Developmental Medicine & Child Neurology. 2026 Apr 17; Online ahead of print

Abstract
No abstract available
PMID: 41996273

**6.Effects of Telerehabilitation on Gross Motor Function in Children with Cerebral Palsy: A Systematic Review**

Olga Maia, Daniel Moreira Gonçalves, Rui Vilarinho

Healthcare (Basel). 2026 Apr 3

Background/Objectives: Telerehabilitation may increase access to neuropediatric physiotherapy. This review evaluated the effects of telerehabilitation on gross motor function in children with cerebral palsy. Methods: Multiple databases were searched for intervention studies examining telerehabilitation and gross motor outcomes. Risk of bias was assessed and certainty of evidence graded. Results: Five studies involving 152 children were included. Interventions varied widely, and findings suggested potential benefits for gross motor and functional outcomes, though results were heterogeneous. Conclusions: Telerehabilitation may be feasible and potentially beneficial for children with cerebral palsy, but limited and heterogeneous evidence warrants cautious interpretation and further high-quality research.
PMID: 41975944

**7.Overall and modality-specific exercise doses for motor skill improvement in cerebral palsy: a systematic review and Bayesian network dose-response meta-analysis**

Qiang Xiong, Xing-Liang Duan, Peng-Wei He

PeerJ. 2026 Apr 8

Objective: To examine nonlinear dose-response relationships of overall and modality-specific exercise on motor skill improvement in children and adolescents with cerebral palsy using Bayesian network meta-analysis. Methods: Randomized controlled trials involving participants aged 18 years or younger were analyzed. Exercise dose was standardized as metabolic equivalents multiplied by minutes per week, and motor outcomes were assessed using the Gross Motor Function Measure. Results: Twenty trials were included. Exercise produced small-to-moderate improvements in motor function, with an inverted U-shaped dose-response relationship peaking near 560 METs × min/week. Body control training produced the most consistent improvements at approximately 330 METs × min/week. Conclusion: Exercise improves motor function in children with cerebral palsy, with optimal benefits at moderate exercise doses. Defining effective dose ranges is essential for refining clinical guidelines.
PMID: 41970266

**8.Perspectives towards, and experiences of clean sport in international Cerebral Palsy Football: A cross-cultural qualitative exploration of players and athlete support personnel**

Ellie-May Storr, Carolyn R Plateau, Ailish King, Sam Turner, Janine K Coates, Jamie B Barker

Psychology of Sport and Exercise. 2026 Apr 11; Online ahead of print

Abstract
This qualitative study explored perspectives and experiences of clean sport in international cerebral palsy football among athletes and athlete support personnel. Semi-structured interviews with participants from multiple countries identified key themes related to shared responsibility, integrity challenges, and unclear roles in promoting clean sport culture. Classification fairness, power dynamics, and limited education were highlighted as major concerns. Participants emphasized the need for clearer responsibilities and improved educational resources embedded within international cerebral palsy football structures.
PMID: 41967558

**9.Association between vaccination status and neurodevelopmental outcomes in children with cerebral palsy**

Hong Zhao, Mingbo Hu, Fei Xie, Chunyu Zhang, Linli Zhang, Chao Bai, Junjie Wu, Baofeng Yan, Aikebaier Halike, Jingxuan Xu, Xinping Luan

Frontiers in Pediatrics. 2026 Apr

Background: The safety of vaccines and their impact on functional outcomes in children with cerebral palsy remain significant concerns for both parents and healthcare providers. These concerns have limited the full implementation of routine immunization schedules in this specific population. Objective: This study aimed to investigate the association between vaccination status and the development of motor and communication functions in children with cerebral palsy. The findings are intended to inform the development of targeted vaccination strategies. Methods: We conducted a bidirectional cohort study involving 484 children diagnosed with cerebral palsy at the Second Affiliated Hospital of Xinjiang Medical University between January 2018 and December 2024. Participants were divided into a retrospective cohort (diagnosed 2018–2020, n = 277) and a prospective cohort (diagnosed 2021–2022, n = 207). Based on vaccination status, they were further classified into a vaccinated group (received at least one dose) and an unvaccinated group. Functional abilities were assessed using established classification systems, including the Gross Motor Function Classification System (GMFCS) and the Communication Function Classification System (CFCS). Vaccination completion rates were calculated according to the 2021 Chinese National Immunization Program Schedule. Statistical analyses included the Mann–Whitney U test and Spearman correlation to compare groups and examine relationships between vaccination completion rates and functional scores. Results: Children in the vaccinated group demonstrated significantly better motor function, reflected by lower GMFCS levels ($z = 3.26$, $p = 0.001$), and significantly better communication function, reflected by higher CFCS levels ($z = 2.89$, $p = 0.004$), compared to the unvaccinated group. A higher vaccination completion rate was negatively correlated with GMFCS levels ($r = -0.24$, $p < 0.01$) and positively correlated with CFCS levels ($r = 0.22$, $p < 0.01$). No significant differences were observed between the two groups in manual ability (MACS) or eating and drinking ability (EDACS). In the prospective cohort, the vaccinated group demonstrated significantly greater improvement in GMFCS and CFCS classifications during follow-up ($p < 0.05$). Conclusion: For children with cerebral palsy, routine vaccination is not only safe but may also exert a positive regulatory effect on neurological development. We recommend reinforcing routine immunization in this population and optimizing vaccination strategies through ongoing dynamic follow-up.
PMID: 41993894

**10.Fecal Calprotectin as a Potential Biomarker of Gastrointestinal Inflammation in Children With Cerebral Palsy: A Prospective Pilot Study**

Ece Gültekin, Abdullah Sert, Meryem K Başaran

Klinische Pädiatrie. 2026 Apr 15; Online ahead of print

Abstract
The presence of calprotectin in feces may reflect neutrophil migration into gastrointestinal tissue due to inflammation. This study compared fecal calprotectin concentrations between children with cerebral palsy and healthy peers and investigated associations with disease status. Twenty-five children with cerebral palsy and 27 healthy children were included in a 3-month cohort study. One stool sample was collected from each participant and analyzed. Median fecal calprotectin levels were significantly higher in the cerebral palsy group than in controls. Albumin and total protein levels were also significantly higher in the cerebral palsy group. A fecal calprotectin cut-off of 23.5 µg/g demonstrated high sensitivity and specificity. Children with cerebral palsy exhibit elevated fecal calprotectin levels compared with healthy peers, suggesting altered intestinal inflammatory activity.
PMID: 41985472

**11.Polypharmacy among adolescents and adults with cerebral palsy in a clinical setting**

Caitlin Cassidy, Joshua C Wiener, Karen Pratt, Laura Brunton

PM&R. 2026 Apr 13; Online ahead of print

Background: Adolescents and adults with cerebral palsy often experience multimorbidity related to their condition, including pain, epilepsy, mood disorders, and other conditions, placing them at risk for polypharmacy. Objectives: To determine the proportion of adolescent and adult patients with cerebral palsy experiencing polypharmacy in a clinical setting and to identify patient factors associated with polypharmacy. Design and setting: This cross-sectional study involved a retrospective review of medical records from initial visits at a specialized outpatient service for adolescents and adults with childhood-onset disabilities. Participants: All patients with a formal diagnosis of cerebral palsy who had an initial visit between October 2014 and December 2017 (n = 307).Main outcome measures: Patients taking five or more regularly scheduled medications were identified as experiencing polypharmacy. Results: Within the sample, 33.2% of patients were experiencing polypharmacy. Older age, higher Gross Motor Function Classification System level, and epilepsy history were associated with experiencing polypharmacy. Conclusion: Polypharmacy is common among adolescent and adult patients with cerebral palsy in a clinical setting.
PMID: 41978240

**12.Construct validity, reliability, and sensitivity of proxy-reported pain interference in individuals with cerebral palsy**

Breanne J Byiers, Serena Chan, Frank J Symons, Chantel C Burkitt

The Journal of Pain. 2026 Apr 11; Online ahead of print

Abstract
Chronic pain is common in individuals with cerebral palsy but difficult to assess due to communication challenges. This study evaluated the construct validity, reliability, and sensitivity of a proxy-reported Modified Brief Pain Inventory. Confirmatory factor analysis supported a reduced two-factor model with strong internal consistency. Test–retest reliability was excellent, and sensitivity analyses showed reductions in pain interference following clinical intervention. Findings support the use of the reduced proxy-reported instrument for assessing pain interference in individuals with cerebral palsy.
PMID: 41974217

**13.China approves brain chip to overcome paralysis**

No authors listed

Nature Biotechnology. 2026 Apr

Abstract
No abstract available
PMID: 41998388

**14.Exoskeleton-assisted physiotherapy in school and outpatient contexts for minimally ambulant children with cerebral palsy**

No authors listed

Developmental Medicine & Child Neurology. 2026 Apr 17; Online ahead of print

Abstract
No abstract available
PMID: 41996268

**15.The effect of video game-based exercises on selective motor control, balance, fear of falling, and functional capacity in individuals with spastic cerebral palsy: A randomized controlled trial**

Süveybe Yavaş, Sezen Tezcan

Research in Developmental Disabilities. 2026 Apr 15; Online ahead of print

Aim: This single blind randomized controlled parallel-group study aimed to investigate the effects of video game-based exercises on selective motor control, balance, fear of falling, and functional capacity in individuals with spastic cerebral palsy. Methods: Twenty-six individuals with spastic cerebral palsy with a mean age of 12 ± 3.92 were randomized into an intervention group (n = 13) and a control group (n = 13). Upper and lower extremity selective motor control, balance, fear of falling, and functional capacity were evaluated using the Selective Control of the Upper Extremity Scale, Selective Control Assessment of the Lower Extremity, Pediatric Balance Scale, Pediatric Fear of Falling Questionnaire, and 6-Minute Walk Test. The intervention group received 30 min of conventional physiotherapy and 30 min of video game-based exercises, while the control group received 60 min of conventional physiotherapy, twice weekly for 10 weeks. Results: Intergroup analyses showed no statistically significant differences between groups ($p > 0.05$). In intragroup analyses, selective motor control improved in both groups. Balance improved significantly only in the intervention group, while functional capacity increased significantly in both groups. Conclusion: Video game-based exercise did not provide additional benefits compared to conventional physiotherapy but may enhance selective control, balance, and functional capacity by increasing motivation to participate in therapy.
PMID: 41990569

**16.HipScreen: a valid mobile app to measure hip migration in children with cerebral palsy in the community setting**

Akib M Khan, John Amen, Oliver Perkins, Konstantinos Kafchitsas, Stephen J Cooke, Michail Kokkinakis, Laura Ball, Andre King, Sophie Billingham, Joel Bowpitt, Alexandra Webster, Sunita Dhindsa, Anita Patel, Lucy Clough, Ola Pieno, Beckie Corps, Rachel Heayberd, Suzi Davenport, Claire Wicks, Jill Cadwgan

Bone & Joint Open. 2026 Apr 15;7(4)

Aims: Accurate measurement of Reimers migration percentage is essential for hip surveillance in cerebral palsy. This study evaluated whether experts and non-specialists could use a free smartphone application to measure migration percentage. Methods: Experienced and inexperienced clinicians measured hip migration using the app on pelvic radiographs at two timepoints. Measurements were compared with gold-standard PACS measurements. Results: Measurements from both groups showed strong correlation with gold-standard measurements. Inter- and intrarater reliability were excellent, with no significant differences between groups. Conclusion: The HipScreen app provides accurate measurement of hip migration in cerebral palsy and can be reliably used by specialists and non-specialists, supporting its use in community hip surveillance programs.
PMID: 41983275

**17.Review of Recent Advances in Implantable Brain-Computer Interfaces for the Restoration of Motor Function in Patients With Paralysis**

Daokai Yang, Xiaogang Liu, Junhang Hu, Wei Zhang

Medical Science Monitor. 2026 Apr 14

Abstract
Implantable brain-computer interfaces have advanced considerably in restoring motor function for individuals with paralysis. Improvements in invasive electrode technology, neural signal decoding, and real-time control have enabled effective interaction with robotic devices, exoskeletons, and stimulation systems. Long-term implanted electrodes offer advantages in stability, resolution, and neuroplasticity induction. Recent studies integrating high-density arrays and deep learning have demonstrated near real-time, multi-degree-of-freedom motor control. Hybrid interfaces and closed-loop neuromodulation further extend rehabilitative potential. Implantable brain-computer interfaces show strong promise for clinical neurorehabilitation and continued progress toward clinical deployment.
PMID: 41978246

**18.Individualized electrode subset improves the calibration accuracy of an EEG P300-design brain-computer interface for people with severe cerebral palsy**

Si Long Jenny Tou, Seth A Warschausky, Petra Karlsson, Jane E Huggins

Frontiers in Human Neuroscience. 2026 Mar 26

Introduction: This study examined whether individualized selection of electroencephalography electrode locations improves calibration accuracy of a P300 brain-computer interface in people with cerebral palsy with varying severity. Methods: A forward-selection algorithm was used to identify optimal eight-electrode subsets for each participant. Calibration accuracy using individualized subsets was compared with a widely used default electrode configuration. Results: Individualized subsets significantly improved calibration accuracy in participants with severe cerebral palsy, with no group-level benefit observed in mild cerebral palsy or typically developing controls. Larger electrode subsets were required by participants with severe cerebral palsy to approach asymptotic accuracy. Discussion: Individualized electrode selection may accommodate atypical neuroanatomy in severe cerebral palsy, whereas standard electrode configurations appear sufficient for milder impairments and typically developing individuals.
PMID: 41971353

**19.Psychometric Properties of Turkish Version of Perceived Efficacy and Goal-Setting System**

Gokcen Akyurek, Rumeysa Gunal Gunser, Rukiye Begum Koca Senturk

OTJR: Occupation, Participation and Health. 2026 Apr 16; Online ahead of print

Abstract
Goal setting is essential in pediatric rehabilitation to enhance participation and meaningful goals. This study examined the construct validity, internal consistency, and test–retest reliability of the Turkish version of the Perceived Efficacy and Goal-Setting System (PEGS) in children with disabilities. A methodological cross-sectional design was used with 120 children aged 7 to 9 years (90.9% cerebral palsy, 9.1% spina bifida), their caregivers, and teachers from three rehabilitation centers in Turkey. The adaptation process followed WHO guidelines. Data were collected with PEGS-Child, PEGS-Caregiver, PEGS-Teacher forms, and demographics. Exploratory and confirmatory factor analyses confirmed a single-factor structure consistent with the original, with factor loadings above 0.320 and acceptable fit indices (CFI > 0.90, RMSEA < 0.08). Cronbach's alpha ranged from 0.72 to 0.77. Test–retest reliability was high (ICC = 0.876–0.943). The Turkish PEGS is valid and reliable, supporting child participation in goal-setting and fostering collaboration between home and school.
Plain language summary
Adaptation of the "Perceived Efficacy and Goal-Setting System (PEGS)" Scale, Assessing the Participation of Children With Physical Disabilities in the Goal-Setting Process, Into Turkish This study tested whether the Turkish version of the Perceived Efficacy and Goal-Setting System (PEGS) is a useful and trustworthy tool for children with physical disabilities. PEGS helps children show what they can do and choose goals that are meaningful to them. We worked with 120 children aged 7 to 9 years (most with cerebral palsy, some with spina bifida), together with their parents and teachers, in three rehabilitation centers in Turkey. The forms were carefully translated and adapted to Turkish following international guidelines. The results showed that the Turkish PEGS works well: children, parents, and teachers gave consistent answers, and repeating the test after 2 weeks gave very similar results. The structure of the test was also the same as the original version. In conclusion, the Turkish PEGS is a reliable and valid tool that can help children, families, and teachers work together to set goals during rehabilitation and support children's participation in daily life.
PMID: 41992758

**20.Rehabilitation and dosing practice for individuals with cerebral palsy in Indonesia: a survey of physiotherapists and occupational therapists**

Suci Anatasia Nazier, Elizabeth Maus, Sara Tafone, Satria Ardianuari, Jill Heathcock

Disability and Rehabilitation. 2026 Apr 16; Online ahead of print

Purpose: Although rehabilitation is vital for cerebral palsy, practices in Indonesia are understudied. This study aimed to describe rehabilitation practice, explore perceptions of service delivery, and examine how dosage correlated with perceptions. Methods: A total of 233 Indonesian therapists completed an anonymous online survey between February and April 2025. The survey captured therapy dosage and perceptions of evidence-based practice, workforce, infrastructure, and family readiness. Data were analyzed using descriptive statistics and correlations. Results: Therapists reported using both recommended and non-recommended rehabilitation practices. Therapy typically lasted 30–45 min, 1–2 times per week. Therapy time correlated with positive perceptions of evidence-based practice exposure, skill set, infrastructure, and workforce. Institutional support for training showed the strongest association with greater evidence-based practice exposure. Conclusion: Rehabilitation dosage in Indonesia remains below recommended levels. Barriers include financial constraints, limited workforce, and insufficient exposure to evidence-based practice. Institutional training support and workforce expansion are essential to improve cerebral palsy service delivery.
Plain language summary
Understanding therapists' perspectives is essential for developing context-specific cerebral palsy rehabilitation strategies in low - and middle-income countries like Indonesia. Low rehabilitation dosage and workforce shortages highlight the need for strengthened therapist training in cerebral palsy care. Institutional investment in resources and training for therapists may help improve the quality of evidence-based rehabilitation practice for Cerebral Palsy. Policy advocacy and action are needed to strengthen the rehabilitation workforce by expanding therapist degree programs and supporting community-based rehabilitation.
PMID: 41989062

**21.The Effect of Social Determinants of Health on Health Care Delivery for Children With Cerebral Palsy in the US Health Care System: A Scoping Review**

Kathryn Radulovacki, Bradley Q Fox, Christian Zirbes, Rachelle Shao, Evelyn Hunter, Summer Shabana, Muhamed Sanneh, Devika A Shenoy, Stephanie Hendren, Anthony A Catanzano

Journal of Developmental & Behavioral Pediatrics. 2026 Mar–Apr;47(2)

Objective: This scoping review evaluated the impact of social determinants of health on health care delivery and access for children with cerebral palsy in the United States. Method: A comprehensive literature search was conducted across multiple databases. Studies published before 2010, conducted outside the United States, or lacking extractable data were excluded. Selected manuscripts underwent full-text review and thematic analysis. Results: Nine studies were included. Three primary themes emerged: race, economic standing, and insurance status. Black and multiracial children experienced higher postoperative complications and unmet care coordination needs. Higher economic status was associated with greater service access. Public insurance was linked to insufficient care coordination and increased readmissions. Conclusion: Race, insurance status, and economic standing are significantly associated with inequities in health care access and outcomes for US children with cerebral palsy. Standardized reporting and further investigation of systemic inequities are needed.
PMID: 41985009

**22.“It Feels Like My Spine is About to Break”: Experience and support needs of family caregivers of children with cerebral palsy in Ethiopia**

Melkitu Melak, Solomon Mekonnen, Afolasade Fakolade, Beata Batorowicz

PLoS One. 2026 Apr 13

Background: Due to the complex and long-term care needs of children with cerebral palsy, caregivers often face an overwhelming caregiving burden and experience physical and psychological strain. Evidence regarding caregiving experiences and access to support services is scarce in Ethiopia. Objectives: This study aimed to explore the caregiving experiences and support needs of family caregivers of children with cerebral palsy in Ethiopia. Method: An exploratory descriptive qualitative design was used. Thirteen family caregivers were purposively selected and participated in face-to-face, semi-structured interviews conducted in Amharic. Data were transcribed verbatim and analyzed using reflexive thematic analysis. Results: Four themes were identified: emotional journey of caregivers, daily caregiving demands, impact of caregiving, and support systems and needs. Caregiving negatively affected caregivers' emotional, physical, and social well-being. Participants reported needs for financial assistance, psychological support, adequate healthcare services, access to assistive devices, and education for their children. Conclusion: The findings highlight the urgent need for interventions addressing financial vulnerability, psychosocial support, and improved access to healthcare, assistive devices, and education for children with cerebral palsy.
PMID: 41973687

**23.Housing and need for personal assistance in relation to hand function: a cross-sectional study of 2304 Swedish adults with cerebral palsy**

Katina Pettersson, Jenny Hedberg-Graff, Anna Lindgren, Evgenia Manousaki, Erika Cloodt, Elisabet Rodby-Bousquet

Disability and Health Journal. 2026 Apr 9; Online ahead of print

Background: Fewer adults with cerebral palsy live independently compared with adults without disabilities. Access to personal assistance may help overcome barriers to independent living, but little is known about hand function in adults with cerebral palsy and its role in achieving independent living. Objective: To explore associations between housing and personal assistance in adults with cerebral palsy in relation to hand function, age, and sex. Methods: This cross-sectional registry-based study included 2304 adults with cerebral palsy aged 20–64 years from the Swedish CP Follow-up Program and Quality Registry. Logistic regression models were used to estimate odds ratios. Results: Nearly half of adults with cerebral palsy lived independently, while 35% lived with their parents. Independent living was strongly associated with hand function, age, and access to personal assistance. The probability of independent living decreased with increasing Manual Ability Classification System levels. Odds of independent living were higher with access to personal assistance, increasing age, and among women compared with men. In total, 43% of participants received personal assistance, with probability increasing with higher hand impairment levels. Conclusions: Hand function and access to personal assistance are key predictors of independent living in adults with cerebral palsy. Promoting hand function and ensuring adequate assistance are essential to improve autonomy and quality of life.
PMID: 41966963

**24.Individual-level prediction models of societal costs and health-related quality of life in pediatric cerebral palsy: a population-based study from Spain**

Diana Marcela Nova Díaz, Paloma Arana-Rivera, Eduardo Sánchez-Iriso, Sergio Aguilera-Albesa, Diego Rivera

Cost Effectiveness and Resource Allocation. 2026 Apr 11; Online ahead of print

Abstract
No abstract available
PMID: 41965720

**25.Cognition in adults with cerebral palsy: A systematic review**

Kanishka Baduni, Brittany Perry, Seth Warschausky, Nathalie L Maitre, Adult CP Clinical Practice Guideline Working Group

Developmental Medicine & Child Neurology. 2026 Apr 17; Online ahead of print

Aim: To synthesize evidence on cognitive functioning in adults with cerebral palsy (CP), evaluate the feasibility and validity of cognitive screens, determine whether cognitive functioning declines with age, identify factors associated with cognitive outcomes, and summarize interventions reporting cognitive outcomes. Method: Five databases were searched through 2025. Eligible studies enrolled adults with CP and reported cognitive outcomes. Two reviewers screened and extracted data; quality was appraised with JBI tools and certainty graded using Grading of Recommendations Assessment, Development and Evaluation (GRADE). Findings were synthesized narratively according to cognitive domain. Results: Thirty studies (estimated 1150 adults, 3900 assessments) were included. Executive function, and visuospatial and perceptual-motor skills, were most frequently impaired. Attention and processing speed and episodic memory were also commonly reduced. Certainty was moderate for executive function and very low for other domains because of small samples, bias, inconsistency, and imprecision. Longitudinal and registry data suggested stability from late adolescence through mid-adulthood. Greater motor severity and reduced manual ability were associated with lower cognitive performance. No motor-minimized, CP-validated screening battery was identified across 48 instruments. Interpretation: Adults with CP commonly show domain-specific cognitive difficulties that are established early and remain stable through mid-adulthood. Measurement limitations and selection biases constrain prevalence estimates. Priorities include motor-minimized tools with CP-specific norms, adequately powered trials with standardized cognitive endpoints, and longitudinal cohorts examining modifiable factors.
PMID: 41996399

**26.Integrating genome and RNA sequencing to enhance diagnostic precision in cerebral palsy**

Liuyang Zhang, Yiran Xu, Yanqiu Liu, Yongyi Zou, Hui Xiao, Lingling Zhang, Dengna Zhu, Yanan Wu, Xiaoli Zhang, Mirigul Maymaytiniyazi, Bicheng Yang, Changlian Zhu, Tingting Huang

BMC Pediatrics. 2026 Apr 14; Online ahead of print

Abstract
No abstract available
PMID: 41981504

**27.Perceptions of the Body in Cerebral Palsy: Voices of Family Caregivers**

Mariana Cristina Palermo Ferreira, Érica Cesário Defilipo, Lélia Cápua Nunes, Pedro Henrique Berbert de Carvalho

Healthcare (Basel). 2026 Apr 7

Background/Objectives: Caregivers of children and adolescents with cerebral palsy face physical and emotional challenges, and their perceptions of the body may shape participation, care practices, and well-being. This study aimed to understand caregivers' perceptions, values, and cultural beliefs about the bodies of children and adolescents with cerebral palsy. Methods: A qualitative study was conducted using focus groups with mothers and grandmothers of children and adolescents with cerebral palsy. Data were transcribed and analyzed using content analysis. Results: Three themes emerged: perceptions of the body in social interactions; viewing the body as capable of independence when stimulated; and viewing the body as dependent and requiring constant support. Conclusions: Expanding caregivers' knowledge about cerebral palsy may promote participation and mitigate beliefs related to dependence and vulnerability.
PMID: 41975969

**28.Advancing knowledge translation processes in motor rehabilitation for children with cerebral palsy and developmental coordination disorder: insights from a scoping review**

Léa Obrecht, Femke van Abswoude, Katrijn Klingels, Bert Steenbergen

BMC Health Services Research. 2026 Apr 11; Online ahead of print

Abstract
No abstract available
PMID: 41965646

# Prevention and Cure

**29.Motor skills and outcomes of activities and participation in children and adults born preterm without cerebral palsy: A systematic review**

No authors listed

Developmental Medicine & Child Neurology. 2026 Apr 17; Online ahead of print

Abstract
No abstract available
PMID: 41996263

**30.Concordance and Association of Kidokoro MRI Scores at 32 and 40 weeks post-menstrual age with Neurodevelopmental Outcomes in Very Preterm Infants**

Linda Bonezzi, Tommaso Biagioni, Simona Fiori, Carly Luke, Joanne M George, Paul B Colditz, Jurgen Fripp, Robert S Ware, Kerstin Pannek, Roslyn N Boyd

AJNR American Journal of Neuroradiology. 2026 Apr 15; Online ahead of print

Background and purpose: Early identification of neurodevelopmental risk in very preterm infants is critical for timely intervention. The Kidokoro MRI scoring system offers a semi-quantitative approach to evaluating brain abnormalities. This study aimed to assess the agreement of Kidokoro scores obtained in the same infants at 32- and 40-weeks postmenstrual age, and their association to cognitive, language, and motor outcomes at 24 months corrected age. Materials and methods: A cohort of 187 very preterm infants underwent structural MRI at two timepoints, early and term-equivalent age, using 3 T scanners. Scans were scored independently using a modified Kidokoro system. Agreement was assessed using Bland–Altman analysis. Neurodevelopmental outcomes were assessed at 24 months using the Bayley-III. Multivariable linear regression evaluated associations between MRI scores and outcomes. Results: Early MRI scores were consistently higher than term-equivalent age scores, particularly for white matter abnormalities. Both early and term-equivalent age Kidokoro global brain abnormality scores were negatively associated with Bayley-III cognitive and motor scores but not language scores. Reduction in global scores between timepoints correlated with higher motor scores. White matter abnormalities were linked to poorer motor outcomes at both timepoints. Conclusions: Kidokoro scores at early and term-equivalent ages are associated with neurodevelopmental outcomes at 24 months. Global abnormalities and white matter scores at either timepoint, as well as longitudinal changes, are significantly linked to motor outcomes. Refinement of early scoring may enhance clinical utility.
PMID: 41986144