

# Evaluating Physiotherapy Modalities in Cerebral Palsy: A Systematic Review of Functional and Quality Outcomes

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## ABSTRACT

**Introduction:** Physiotherapy remains central to Cerebral Palsy (CP) rehabilitation, yet the comparative evidence across diverse modalities such as task-specific training, constraint-induced therapy, hydrotherapy, and hippotherapy has not been consistently synthesised.

**Aim:** To evaluate the effectiveness of physiotherapy modalities in improving motor function, participation, and quality of life among children with CP.

**Materials and Methods:** Between 2015 and 2025, we systematically searched the electronic databases PubMed, Scopus, and PEDro to find randomised controlled trials and systematic reviews related to children with CP between the ages of 2 and 18 years. The outcomes we recorded included gross motor function, upper limb activity, participating in everyday life, and caregiver-reported quality of life. Because of differences in research design and analysis methods across the studies, narrative synthesis was used to summarise the findings.

**Results:** Thirty-two studies met the inclusion criteria. Task-specific and intensive physiotherapy programmes consistently improved Gross Motor Function Measure (GMFM) scores. Constraint-induced movement therapy yielded moderate gains in upper limb function. Hydrotherapy and hippotherapy enhanced participation and psychosocial well-being. Evidence for neurodevelopmental therapy was mixed, with limited superiority over task-specific approaches.

**Conclusion:** Physiotherapy interventions demonstrate measurable benefits in CP rehabilitation, particularly task-specific and intensive programmes. Future trials should prioritise standardised outcome measures and long-term follow-up to strengthen evidence for clinical practice.

**Keywords:** Cerebral palsy, Constraint-induced movement therapy, Hippotherapy, Hydrotherapy, Motor skills disorders, Physical therapy modalities, Quality of life.

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