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Research Question

Which sensory-based OT interventions are most effective to promote participation and motor skill development in young children with CP?

Introduction

Cerebral palsy (CP) is one of the most common childhood disabilities and can affect a child's mobility, posture, and ability to participate independently in everyday activities. See Figure 1 for types of CP.

The most common type of CP is spastic cerebral palsy, which accounts for approximately 70-80% of cases, and often results in motor impairments.

Occupational Therapy (OT) plays an important role in helping children with cerebral palsy improve motor skills and participation in daily activities.

One intervention used in OT is sensory integration, which aims to address sensory processing challenges that may affect a child's motor performance and participation.

Given the prevalence of cerebral palsy and the need for effective interventions, this systematic review was conducted to further explore the evidence supporting sensory integration interventions for children with CP.

Method

Review process: Four independent reviewers screened studies, assessed study quality, and extracted data following PRISMA guidelines

Date of search: Literature search conducted May 14–21, 2026, with an additional search completed on May 21, 2026.

Inclusion criteria: Peer-reviewed, full-text journal articles published in English between 2021 and 2026.

Exclusion criteria: Study protocols, systematic reviews, scoping reviews, dissertations, conference proceedings, and studies that did not meet the inclusion criteria.

Databases: EBSCOhost, CINAHL, Academic Search Complete, and PsycINFO through the Hawai'i Pacific University online library.

Search terms: Cerebral palsy, children, early childhood, pediatrics, occupational therapy, sensory intervention, sensory integration, motor skills, and participation

Studies included: Nine articles were identified during the initial search and reviewed for inclusion in the systematic review. Six studies met the inclusion criteria.

Figure 1. *Types of CP*

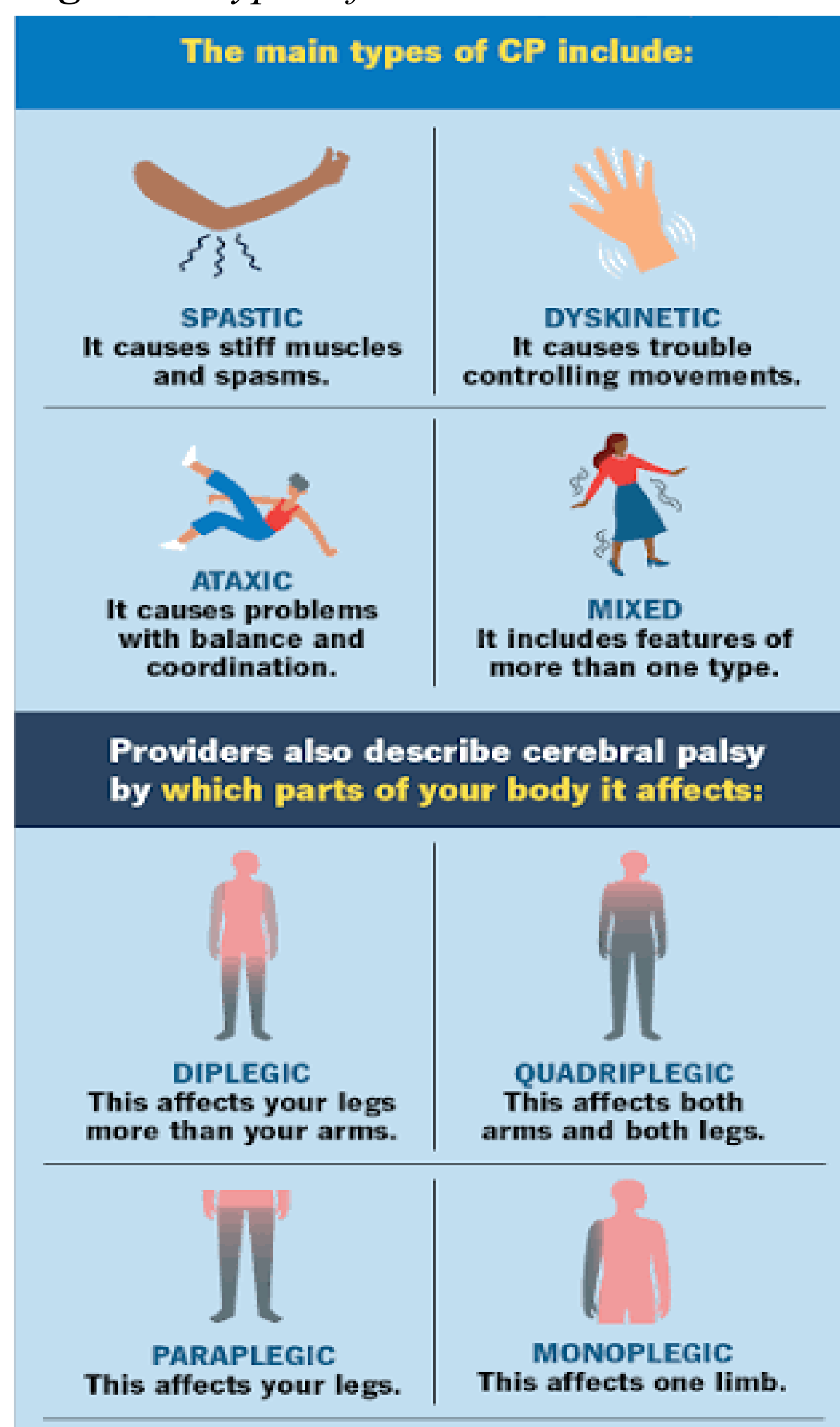


Image from MyClevelandClinic.org

Figure 2. *Hippotherapy*



Image from hrrmc.com

Figure 3. *Neuromotor Approach*



Image from CBphysiotherapy

Results

Six studies met the inclusion criteria for the systematic review. The articles were assessed according to their level of evidence, risk of bias, and methodological quality. The information from these articles was divided into **three themes**:

1. Sensory Integration and Neurodevelopmental
2. Neuromotor, and Hippotherapy
3. Multisensory/Whole-Body.

Discussion

The evidence suggests that sensory-based OT interventions can improve motor skills, balance, mobility, upper extremity function, sensory processing, and participation in children with cerebral palsy. Sensory integration and neurodevelopmental interventions showed the most consistent improvements, while constraint-induced movement therapy and hippotherapy also led to positive changes in function and participation. Figure 2 illustrates hippotherapy while Figure 3 illustrates OT intervention using a sensory-based neuromotor approach.

Although the results were encouraging, small sample sizes, differences in treatment frequency, and short follow-up periods made it difficult to compare results across studies. More research with larger sample sizes and more consistent treatment methods is needed to strengthen the evidence.

Conclusion

Evidence supports the use of sensory-based occupational therapy interventions for children with cerebral palsy. Interventions including sensory integration therapy, neurodevelopmental and neuromotor multisensory interventions, and hippotherapy improved motor skills, balance, functional mobility, upper extremity function, and participation.

Further research is needed to examine the long-term effects of these interventions, compare outcomes in children over 6 years old, and determine their effectiveness for adults with cerebral palsy.

References

