# Gait Analysis in Cerebral Palsy: A Systematic Review

**Shivangi Choudhary, Postgraduate Student, Department of Physiotherapy, Jyotirao Phule Subharti College of Physiotherapy, Swami Vivekanand Subharti University, Meerut, Uttar Pradesh, India.**
**Jasmine Anandbai, Professor, Department of Physiotherapy, Jyotirao Phule Subharti College of Physiotherapy, Swami Vivekanand Subharti University, Meerut, Uttar Pradesh, India.**
**Uzma Khan, Assistant Professor, Department of Physiotherapy, Jyotirao Phule Subharti College of Physiotherapy, Swami Vivekanand Subharti University, Meerut, Uttar Pradesh, India.**
**Shikha Singh, Associate Professor, Department of Physiotherapy, Maharishi Markandeshwar Institute of Physiotherapy and Rehabilitation, MM (DU), Mullana, Ambala, Haryana, India.**

**NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:**
Dr. Shikha Singh,
Associate Professor, Department of Physiotherapy, Maharishi Markandeshwar Institute of Physiotherapy and Rehabilitation, MM (DU), Mullana, Ambala, Haryana, India.
E-mail: shikhasinghmpt@gmail.com

## ABSTRACT

**Introduction:** To comprehensively investigate the methods, results, and clinical relevance of gait analysis in children with Cerebral Palsy (CP), with an emphasis on spatiotemporal, kinematic, and kinetic parameters.

**Materials and Methods:** A comprehensive analysis of research from 2019 to 2024 that was retrieved from PubMed, Scopus, and Google Scholar was carried out. Peer-reviewed research utilising motion capture, force plates, and Electromyography (EMG) for gait analysis in CP was one of the selection criteria. We extracted and synthesised data on population, interventions, methods, and results.

**Results:** Only 10 of the 65 reviewed studies were deemed eligible for inclusion. Measures like stride length, cadence, joint angles, and muscle activation patterns were frequently examined. According to the review, gait analysis can be used to customise treatments such as orthotic management and Selective Dorsal Rhizotomy (SDR).

**Conclusion:** This study highlights developments in wearable sensors and machine learning while synthesising the most recent data on gait analysis in CP. The study emphasises how gait analysis can be used to improve functional outcomes and refine treatment strategies.

**Keywords:** Interventions, Kinematics, Motion capture, Spatiotemporal parameters.