

Does bisphosphonate use improve bone mineral density in children with cerebral palsy?

Clinical Question	How effective and safe is bisphosphonate therapy for treating low bone mineral density (BMD) in children with cerebral palsy (CP)?
Bottom Line	<p>There is very low certainty evidence to suggest that, compared to placebo or no treatment, bisphosphonate therapy may improve BMD in the lumbar spine and distal femur in children with cerebral palsy.</p> <p>Evidence from one study showed improved BMD z-scores at six months post-intervention in the lumbar spine, in femur region one (metaphysis just proximal to the growth plate), and femur region two (region of transition between the broad metaphysis and narrow femoral shaft), but not in femur region three (distal portion of the femoral diaphysis).</p> <p>There is no available evidence that shows whether bisphosphonate treatment may reduce fracture frequency or improve bone pain and quality of life in this population. Minimal adverse effects were reported following 12 months of bisphosphonate treatment.</p>
Caveat	<p>This review included two small randomised controlled trials, with a total sample size of 34 participants. As both studies used different comparators, review authors were unable to combine results. Both studies were carried out over 10 years ago. In recent years, several other therapies to improve BMD in children with cerebral palsy have been investigated, including weight-bearing activities and vitamin D supplementation, with or without calcium. The relative efficacy of bisphosphonates must now be assessed in the context of recent evidence reported from other interventions.</p>
Context	<p>Osteoporosis and poor bone strength is common in people with CP. This leads to a high risk of bone fractures, even from very modest trauma. Children with CP who are unable to walk, are at particularly high risk of poor bone strength and fractures in the leg bones. Bisphosphonates are a group of medications demonstrated to improve bone strength in adults.</p>
Cochrane Systematic Review	<p>Hurley T, Zareen Z, Stewart P, McDonnell C, McDonald D, Molloy E. Bisphosphonate use in children with cerebral palsy. Cochrane Database of Systematic Reviews 2021, Issue 7. Art. No.: CD012756. DOI: 10.1002/14651858.CD012756.pub2. This review contains 2 trials with a total of 34 participants.</p>

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Systematic review link:

<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD012756.pub2/full>