

# The Bone & Joint Journal



## Supplementary Material

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**Table i.** Summary of evidence for Delphi study. The authors turned this into a short evidence briefing document for the participants' introduction.

#	Piece of work	Synopsis
1	WS1 (qualitative) NON-STOP, 2023 <sup>1</sup>	<ul style="list-style-type: none"> <li>- Clinicians and child/family dyads* mention need for consistent evidence.</li> <li>- Long- and short-term goals discussed, i.e. radiological outcome at skeletal maturity and function (i.e. pain, activity levels).</li> <li>- App well received as a concept by clinicians and child/family dyads.</li> <li>- App could provide a step towards consensus/agreement on treatment and a reduction in variation of care.</li> </ul>
2	Systematic review, 2020 <sup>2</sup>	<ul style="list-style-type: none"> <li>- No evidence regarding most effective NON-STOP.</li> <li>- Brech and Guarnieiro<sup>3</sup> showed improvement in range of motion (ROM) and strength compared with no intervention.</li> <li>- Inconsistent findings of orthotics versus no intervention (similar results) or surgery (varied for and against).</li> <li>- &gt; 12 years old did worse with 'minimal' (crutches) input compared to orthotics and surgery.</li> <li>- Larger proportion of children had better Stulberg after having an intervention that wasn't 'watchful waiting' or no intervention.</li> </ul>
3	Case review, 2020 <sup>4</sup>	<ul style="list-style-type: none"> <li>- Demonstrates a variation of care in centres around the UK.</li> <li>- Some children are advised to limit activity while some are not. Similar advice varies for pain relief and physiotherapy referral.</li> </ul>
4	BOSS, 2022 <sup>5</sup>	<ul style="list-style-type: none"> <li>- Incidence rate in UK is 2.48/100,000.</li> <li>- Stiffness is biggest predictor of surgery, age of &gt; 8 years next most important predictor.</li> <li>- Despite frequency of containment surgery, no evidence of improved outcomes (PROMs (PedsQL), Stulberg).</li> <li>- Need a RCT (but no consensus on NON-STOP)</li> </ul>
5	Herring et al, 2004 <sup>6</sup>	<ul style="list-style-type: none"> <li>- No significant difference in the surgical or non-surgical treatment approaches.</li> <li>- Children aged ≤ 6 years were not differently impacted by any intervention and did as well with NON-STOP.</li> <li>- Children aged &gt; 8 years did better with surgery than non-surgery.</li> </ul>

		<ul style="list-style-type: none"> <li>- Lateral pillar classification and age at onset were strong prognostic factors. If a child was lateral pillar C, their outcomes were poor irrespective of intervention. Group B or B/C border did better with surgery if over 8 years old compared with NON-STOP.</li> <li>- Girls did worse if &gt; 8 years old.</li> </ul>
6	Wiig et al, 2008 <sup>7</sup>	<ul style="list-style-type: none"> <li>- Head involvement (%) best predictor, followed by age at diagnosis and lateral pillar classification.</li> <li>- In children &gt; 6 years old with &gt; 50% femoral head involvement, surgery gave better outcome than physio or orthosis.</li> <li>- Physio in those &lt; 6 years old had a favourable outcome (as did orthosis and surgery).</li> <li>- Concluded with suggestion of surgery for &gt; 6 years old children at diagnosis and &gt; 50% femoral head involvement, and that abduction orthosis should be abandoned.</li> </ul>
7	Core outcome set, 2020 <sup>8</sup>	<ul style="list-style-type: none"> <li>- Delphi study for COS (from systematic review and qualitative study).</li> <li>- 16 outcomes identified; six categories (adverse events, life impact, resource use, pathophysiological manifestations, death, and technical considerations).</li> <li>- PROMIS (separate study)<sup>9</sup> showed construct validity, supporting its use in the population.</li> </ul>

\*Dyad refers to 'pairs', i.e. one child and one family member = one child/family dyad. BOSS, British Orthopaedic Surveillance Study; COS, core outcome set; PROM, patient-reported outcome measure; RCT, randomized controlled trial.

## References

1. Galloway AM, Pini S, Holton C, et al. "Waiting for the best day of your life". A qualitative interview study of patients' and clinicians' experiences of Perthes' disease. *Bone Jt Open*. 2023;4(10):735-741.
2. Galloway AM, van-Hille T, Perry DC, et al. A systematic review of the non-surgical treatment of Perthes' disease. *Bone Jt Open*. 2020;1(12):720-730.
3. Brech GC, Guarnieiro R. Evaluation of physiotherapy in the treatment of Legg-Calvé-Perthes disease. *Clinics (Sao Paulo)*. 2006;61(6):521-528.
4. Galloway AM, Holton C, Parnami V, et al. A case review to describe variation in care following diagnosis of Perthes' disease. *Bone Jt Open*. 2020;1(11):691-695.
5. Perry DC, Arch B, Appelbe D, et al. The British Orthopaedic Surgery Surveillance study: Perthes' disease: the epidemiology and two-year outcomes from a prospective cohort in Great Britain. *Bone Joint J*. 2022;104-B(4):510-518.
6. Herring JA, Kim HT, Browne R. Legg-Calve-Perthes disease. Part II: Prospective multicenter study of the effect of treatment on outcome. *J Bone Joint Surg Am*. 2004;86-A(10):2121-2134.
7. Wiig O, Terjesen T, Svenningsen S. Prognostic factors and outcome of treatment in Perthes' disease: a prospective study of 368 patients with five-year follow-up. *J Bone Joint Surg Br*. 2008;90-B(10):1364-1371.

8. **Leo DG, Jones H, Murphy R, et al.** The outcomes of Perthes' disease. *Bone Joint J.* 2020;102-B(5):611-617.
9. **Luo W, Ali MS, Limb R, Cornforth C, Perry DC.** Use of the PROMIS Mobility score in assessing function in adolescents and adults previously affected by childhood hip disease. *Bone Jt Open.* 2021;2(12):1089-1095.