

# Can Schroth Physiotherapeutic Scoliosis-Specific Exercise offered on the National Health Service, halt curve progression Adolescent Idiopathic Scoliosis?

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Topics

1. Innovative models of care in musculoskeletal and manual physical therapy

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Publication This is the first publication of this work.

Ethical approval for all studies that will be presented This was a small service evaluation of a physiotherapeutic intervention that had recently been implemented. Ethical approval was not required.

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**Abstract text** Background: Adolescent Idiopathic Scoliosis (AIS) constitutes approximately 80% of all spinal curvature (scoliosis). Curve magnitude progression is most prolific during rapid growth phases (age 10 – 13 years). Physiotherapeutic Scoliosis-Specific Exercise (PSSE) is recommended as a treatment to prevent or limit curve progression, and may reduce the need for bracing in mild curves. These recommendations are made within international guidelines. In the UK, PSSE is not widely offered on the National Health Service (NHS), leading to some patients seeking treatment privately. Schroth PSSE is one of the most well established forms of PSSE and in 2015 Schroth Best Practice (SBP) was created to provide a simpler course of corrective exercise that could be continued independently in the home environment. In response to this, a new Physiotherapy service of SBP for growing AIS patients with mild curves was implemented.

**Aim:** The aim of this project was to evaluate the impact of SBP provision on curve progression and conversion rate to bracing in an NHS cohort.

**Method:** Patients were identified in a physiotherapist-led spinal triage clinic and referred to a physiotherapist trained in SBP at Nottingham University Hospitals NHS Trust (NUH). Patients were included if they met all of the following: a diagnosis of AIS; a riser score (predictor of growth) of 0-3; mild curves [curve magnitude of 10° - 20° (+/- 5°)]; or curves of 20 - 45° (+/- 5°) who declined bracing. All other forms of scoliosis were excluded, including early onset scoliosis; those approaching or at skeletal maturity (risser 4-5); or those listed for surgery. The included patients received on average 5 sessions of SBP in an outpatient setting and were given a home- exercise programme of

corrective Schroth exercises to complete daily for up to 30 minutes. They were taught how to maintain corrected posture in activities of daily living (ADL's), including walking, sitting and standing. After 8 weeks of daily home exercise, patients were given a 4 week break from exercises, but were encouraged to continue with corrective ADL's. Follow-up was in clinic every 6 months with a whole spine X-ray, as per routine monitoring for AIS patients.

Results: In the first year 12 patients met the inclusion criteria. At 6 months post-treatment 100% avoided curve progression and 33% (n=4) improved their Cobb angles beyond 5°(allowed for discrepancy in measurements). Mean Cobb angle was 25° (SD 11.2°) at the beginning of treatment and 22.5° (SD 10.7°) at 6 month follow-up. One patient began wearing a brace despite their curve not worsening.

Conclusion: This small service evaluation indicates that SBP offered in the NHS may halt curve progression and reduce conversion to bracing. However a larger study is needed. Literature indicates that PSSE offered alongside bracing can also optimise outcomes, reducing the conversion to surgery and should be considered as the next avenue of development.

Implications: The expert and innovative practice of SBP could have value within NHS scoliosis services to help manage curve progression in the growing scoliotic spine.