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**Specific exercises reduce the need for bracing in adolescents with idiopathic scoliosis: a practical clinical trial.**

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**Author information****Abstract**

**BACKGROUND:** In an ideal experimental setting, 2 randomized controlled trials recently showed the efficacy of physiotherapeutic **scoliosis-specific exercises** (PSSEs) for **adolescents** with **idiopathic scoliosis** (AIS). Now large observational studies are needed to check the generalizability of these results to everyday **clinical** life.

**OBJECTIVE:** To explore the effectiveness of PSSEs for avoiding **bracing** or progression of AIS in everyday clinics.

**METHODS:** This was a longitudinal comparative observational multicenter study, nested in a prospective database of outpatient tertiary referral clinics, including 327 consecutive patients. Inclusion criteria were AIS, age  $\geq 10$  years old at first evaluation, Risser sign 0-2, and 11-20 °Cobb angle. Exclusion criteria were consultations only and brace prescription at baseline. Groups performed PSSE according to the SEAS (Scientific Exercise Approach to **Scoliosis**) School, usual physiotherapy (UP) and no therapy (controls [CON]). End of treatment was medical discharge, Risser sign 3, or failure (defined by the **need for bracing** before the end of growth or Cobb angle  $> 29^\circ$ ). The probability of failure was estimated by the risk ratio (RR) and 95% confidence interval (CI). The number needed to treat was estimated. Statistical analysis included intent-to-treat analysis, considering all participants (dropouts as failures), and efficacy analysis, considering only end-of-treatment participants. Propensity scores were used to **reduce** the potential effects of confounders related to the observational design.

**RESULTS:** We included 293 eligible subjects after propensity score matching (SEAS, n = 145; UP, n = 95; controls, n = 53). The risk of success was increased 1.7-fold (P = 0.007) and 1.5-fold (P = 0.006) with SEAS versus controls in the efficacy and intent-to-treat analyses, respectively, and the number needed to treat for testing SEAS versus controls was 3.5 (95% CI 3.2-3.7) and 1.8 (95% CI 1.5-2.0), respectively. The success rate was higher with SEAS than UP in the efficacy analysis.

**CONCLUSIONS:** SEAS reduced the **bracing** rate in AIS and was more effective than UP. PSSEs are additional tools that can be included in the therapeutic toolbox for AIS treatment.

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**KEYWORDS:** adolescents; exercise; scoliosis

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