

## Overweight is not predictive of bracing failure in adolescent idiopathic scoliosis: results from a retrospective cohort study.

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#### Abstract

**PURPOSE:** Overweight was found to be a negative predictor of brace effectiveness for adolescent idiopathic scoliosis (AIS), with a threefold higher risk of progression than in normal weight patients. The aim of this study is to investigate overweight, as a predictor of brace results in AIS patients.

**METHODS:** Design: retrospective cohort study.

**POPULATION:** 351 AIS patients (306 females), mean age  $12.9 \pm 1.4$ , mean Cobb  $35.6 \pm 11.4^\circ$ , mean ATR  $11 \pm 4.3^\circ$ , BMI  $19.7 \pm 3$ , median Risser: 2.

**INCLUSION CRITERIA:** no previous treatment, full-time prescription of brace at first visit (18-23 h per day), scoliosis physiotherapeutic exercise according to the SEAS protocol associated.

**OUTCOME:** improved, progressed, and stable according to the  $5^\circ$  Cobb agreed threshold.

**STATISTICS:** a stepwise linear regression was used to look for the effect of BMI as a predictor of result. A Chi-square test and logistic regression were used for the overweight category (BMI  $\geq$  85th percentile). Control for possible confounders was applied.

**RESULTS:** BMI is poorly correlated with final results. Confounders' adjustment did not change the correlation, and the predictive model explained about 10% of the result. Brace results were not statistically different in overweight and normal weight: 44 vs 52% improved, 52 vs 41% stable, and 3 vs 7% worsened, respectively.

**DISCUSSION:** Brace results were similar in overweight and normal weight subjects. These findings subvert the previous results and disprove the role of overweight as a negative predictor. Treatment management, brace type and effectiveness may play a major role in reducing the risks of scoliosis progression.

**KEYWORDS:** BMI; Braces; Overweight; Scoliosis

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