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## Long term efficacy of the Boston brace for the treatment of idiopathic scoliosis

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from 4th International Conference on Conservative Management of Spinal Deformities  
Boston, MA, USA. 13–16 May 2007

Published: 12 October 2007

*Scoliosis* 2007, **2**(Suppl 1):S12 doi:10.1186/1748-7161-2-S1-S12

This abstract is available from: <http://www.scoliosisjournal.com/content/2/S1/S12>

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### Objective

To evaluate the efficacy of Boston brace treatment [1] in preventing progression of idiopathic scoliosis (IS) in long term follow up.

### Study design

Between January 1988 and December 1999, ninety-two children have been managed for juvenile and adolescent IS with a Boston brace. There were eighty-two girls and ten boys with a mean age of thirteen years and four months (range, eight to seventeen years). Most of these young patients were followed up for at least six years after skeletal maturity or until failure of treatment (surgical intervention). The patients had a mean initial Cobb angle of 27 degrees (18–40 degrees) and an apical level between T6 and L2. Fifty-five curves were thoraco-lumbar, while thirty-seven were thoracic.

### Results

Eighty-three patients (ninety percent) who reached skeletal maturity were followed up for a mean of five years and seven months after the cessation of treatment. They had an average final Cobb angle progression of eight degrees. The majority of the patients were complainers about bracing. Failure of treatment occurred in nine patients (ten percent) who underwent surgical treatment.

### Conclusion

Although progression of the curve after discontinuation of brace treatment was recorded in 29.6% of the test group, ninety percent of the patients ultimately avoided surgical treatment. Reviewing the failed cases, we found that skeletally immature children with an initial thoracic curve with a Cobb angle of more than thirty degrees are at high risk for severe progression of the curve. These high risk patients should be identified early and managed with a brace, considering surgical treatment as the next treatment option.

### References

1. Watts HG, Hall JE, Stanish W: **The Boston brace system for the treatment of low thoracic and lumbar scoliosis by the use of a girdle without superstructure.** *Clin Orthop* 1977, **126**:87-92.