

# A PROSPECTIVE RANDOMIZED STUDY OF THE NATURAL HISTORY OF IDIOPATHIC SCOLIOSIS VERSUS TREATMENT WITH THE SPINECOR BRACE



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## INTRODUCTION

The main objective of an orthotic treatment is to stop the progression of the disease in order to avoid surgical fusion. Because of a permanent vertebral deformation that seems to appear with Cobb angles of 30° and more, we consider that an early therapeutic approach will provide a better correction and that the stability of the spine will be permanent. In our previous publications [Coillard et al,2007,2010] we already proved the effectiveness of the SpineCor brace for the treatment of idiopathic scoliosis. The objective of this randomized control trial was to demonstrate the effectiveness of the SpineCor System in the treatment of early adolescent idiopathic scoliosis (15°-30°) compared to the natural evolution of the disease. .

## METHOD

Between July 1998 and June 2002, 78 consecutive patients with Cobb angles between 15-30° were seen in the clinic. 68 patients (87.2%) were recruited and accepted to participate in this randomized control study. After the recruitment visit the patient was assigned to one of the two groups. The assignment of a patient to the control or treated group was done on the random basis.

47 patients participated in this study (26 treated and 21 controls) with at least 5 years follow-up. The inclusion criteria where: 1) High risk of evolution: family history and/or proven progressive 2) No significant pathological malformation of the spine; 3) Girl or boy; 4) Initial Cobb angle between 15° and 30°; 5) Risser 0, 1 or 2. Assessment of brace effectiveness included the percentage of patients who have 5° or less curve progression and the percentage of patients who have 6° or more progression at skeletal maturity

## RESULTS

At three years follow up a **correction was achieved in 50% of treated patient and only in 9.5% of controls**, stabilization in 23.1% treated and 33.4% in controls and **progression in 26.9 % for the treated group and 59.1% for controls** (figure 1). For the control patients we considered as a failure if

the Cobb angle worsened by 5° or more from the original angle and the patient then received treatment.

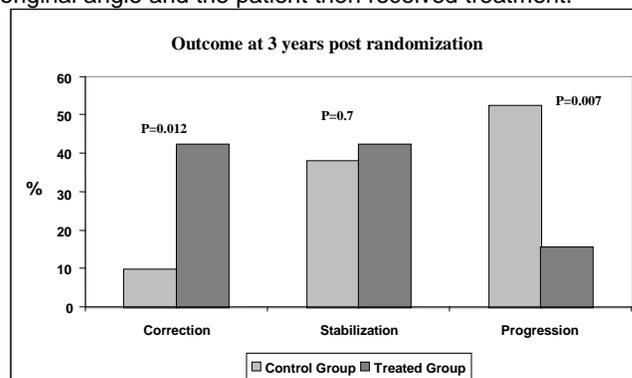


Figure 1: Outcome at 3 years post randomization

## DISCUSSION

The decision to begin orthotic treatment for idiopathic scoliosis is a complex process and often not necessarily detached in term of the psychosocial and body image concerns for many patients and their families. It is therefore crucial that any treatment decision should be based on the best evidence available with respect to the effectiveness of the brace treatment, and finally the patient's own characteristics. The reported success of bracing programs is variable between the different authors and it seems to be centered on slowing/stopping the progression of the curve.

The results obtained in our study clearly show that the SpineCor System can alter the natural history of the Adolescent Idiopathic Scoliosis.

## CONCLUSION

The SpineCor brace is effective for the treatment of early adolescent idiopathic scoliosis comparing with its **natural history**. Moreover, the positive outcome appears to be maintained in the long term.

## REFERENCES

Coillard et al; J Pediatr. Orthop. 2007;27:375-379.

**American Academy of Orthotists & Prosthetists**  
**38<sup>th</sup> Academy Annual Meeting and**  
**Scientific Symposium**  
March 21-24, 2012