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### **Physical exercises in the treatment of adolescent idiopathic scoliosis: an updated systematic review.**

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#### **Abstract**

Two years ago we published an update of another of our previous systematic reviews about the effectiveness of physical exercises (PEs), and we found that the evidence on exercises for AIS was of level 1b. Now we have updated these results in the field of exercises for AIS with the final aim to find the strongest evidence as possible about PEs. Our goal was to verify if treatment with specific exercises for AIS has changed in these years. The study design was a systematic review. A bibliographic search with strict inclusion criteria (patients treated exclusively with exercises, outcome Cobb degrees, all study designs) has been performed on the main electronic databases. We found a new paper about active autocorrection (Negrini et al, 2008 b), a prospective controlled cohort observational study on patients never treated before so the number of manuscripts considered in the systematic review was 20. The highest quality study (RCT) compared 2 groups of 40 patients, showing an improvement of the curve in all treated patients after 6 months. All studies confirmed the efficacy of exercises in reducing the progression rate (mainly in early puberty) and/or improving the Cobb angles (around the end of growth). Exercises were also shown to be effective in reducing brace prescription. Appendices of the popular exercise protocols that have been used in the research studies that are examined are included with detailed description and illustrations. This study (like the previously published systematic reviews) showed that PEs can improve the Cobb angles of individuals with AIS and can improve strength, mobility, and balance. The level of evidence remains 1b according to the Oxford Centre for Evidence-based Medicine, as previously documented.

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