



Spine (Phila Pa 1976). 2013 Jun 15;38(14):E883-93. doi: 10.1097/BRS.0b013e31829459f8.

Exercises for adolescent idiopathic scoliosis: a Cochrane systematic review.

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Abstract

STUDY DESIGN: Systematic review of interventions.

OBJECTIVE: To evaluate the efficacy of scoliosis-specific exercise (SSE) in adolescent patients with adolescent idiopathic scoliosis (AIS).

SUMMARY OF BACKGROUND DATA: AIS is a 3-dimensional deformity of the spine. Although AIS can progress during growth and cause a surface deformity, it is usually not symptomatic. However, in adulthood, if the final spinal curvature surpasses a certain critical threshold, the risk of health problems and curve progression is increased. The use of SSEs to reduce progression of AIS and postpone or avoid other more invasive treatments is controversial.

METHODS: Search methods: The following databases (up to March 30, 2011) were searched with no language limitations: CENTRAL (The Cochrane Library 2011, issue 2), MEDLINE (from January 1966), EMBASE (from January 1980), CINHALL (from January 1982), SPORTDiscus (from January 1975), PsycINFO (from January 1887), and PEDro (from January 1929). We screened reference lists of articles and conducted an extensive hand search of gray literature. Selection criteria: randomized controlled trials and prospective cohort studies with a control group comparing exercises with no treatment, other treatment, surgery, and different types of exercises. Data collection and analysis: Two review authors independently selected studies, assessed risk of bias and extracted data.

RESULTS: Two studies (154 participants) were included. There is low-quality evidence from 1 randomized controlled study that exercises as an adjunctive to other conservative treatments to increase the efficacy of these treatments (thoracic curve reduced: mean difference 9.00, [95% confidence interval, 5.47-12.53]; lumbar curve reduced: mean difference 8.00, [95% confidence interval, 5.08-10.92]). There is very low-quality evidence from a prospective controlled cohort study that SSEs structured within an exercise program can reduce brace prescription (risk ratio, 0.24; [95% confidence interval, 0.06-1.04]) as compared with "usual physiotherapy" [many different kinds of general exercises according to the preferences of the single therapists within different facilities]).

CONCLUSION: There is a lack of high-quality evidence to recommend the use of SSE for AIS. One very low-quality study suggested that these exercises may be more effective than electrostimulation, traction, and postural training to avoid scoliosis progression, but better quality research needs to be conducted before the use of SSE can be recommended in clinical practice. Level of evidence: 2.

