

### EXERCISES FOR ADOLESCENT IDIOPATHIC SCOLIOSIS: UPDATED COCHRANE REVIEW

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#### Introduction

The topic of this presentation is the description of the new version of the Cochrane Review representing the update of the previously published in 2012 and entitled "Exercises for adolescent idiopathic scoliosis". The title of the new version has been slightly changed to "Therapeutic exercises for idiopathic scoliosis in adolescents" to underline the difference between the two macro groups of Exercises defined in the Research Question.

#### Research Question

Evaluation of the effectiveness of Therapeutic Exercises, comparing Generic Therapeutic Exercises (GTE) and Physiotherapeutic Scoliosis Specific Exercises (PSSE) in treating adolescent idiopathic scoliosis.

#### Methods

We performed an extensive search in all main databases up to 15 December 2020 was done. We included randomized controlled trials (RCTs) that compare any therapeutic exercise as stand-alone or as an adjunctive therapy to controls or other non-surgical treatments. We also compared different types of exercises: Physiotherapeutic Scoliosis Specific Exercises (PSSE) versus generic therapeutic exercises (GTE). We did not include observational studies in this update as sufficient RCTs were found to meet our study objectives. We judged subjective but not objective outcomes as at high risk of performance and detection bias.

#### Results

The review included 9 RCTs (467 participants with a mean age of 13.3 years and a mean Cobb angle of 33.4° - range 19° to 66°. 82% of the participants were women. Main results (with relative quality of evidence in brackets) are reported below. Any therapeutic exercise (only PSSE studies found) vs no treatment: Waist asymmetry was reduced (low), Quality of Life (QoL) improved (very low), and no differences in Cobb angle (very low), ATR (low), subjective measurement of self-image (very low). Therapeutic exercises plus other vs other: Cobb angle reduced in the comparisons PSSE plus bracing versus bracing (low), GTE plus other versus other (low); The remaining outcomes related PSSE bracing versus bracing with no differences for subjective measurement of self-image (very low) and QoL (very low). PSSE vs GTE: PSSE reduced Cobb angle (moderate), ATR (moderate), number of subjects with progression more than 5° Cobb (low); PSSE improved QoL (low) and subjective measurement of self-image (low).

#### Conclusions

The results of this review are in line with the recommendations of current SOSORT clinical guidelines. Therapeutic exercises, particularly PSSE over GTE, can be proposed alone or during brace treatment to reduce Cobb angles. PSSE could also be an alternative to bracing in medium degree curves. Anyhow, more randomized controlled trials are needed to strengthen and better specify the current evidence and study other highly clinically relevant outcomes such as QoL, psychological and cosmetic issues, and back pain.

#### Discussion

We found now 9 systematic reviews, but they had different problems like the use of non-Cochrane methodology, the inclusion of studies of non-idiopathic (functional) scoliosis or with a non-standard outcome (bending radiographs). With the papers included in the new version of the review, it was possible to follow more rigorous methods to answer our clinical question.

#### Disclosures (any Conflicts of Interest)

The authors disclose any actual or potential conflicts of interest.