

Oral presentation

Open Access

## Physical exercise and adolescent idiopathic scoliosis: results of a comprehensive systematic review of the literature

Michele Romano, C Fusco, S Minozzi, S Atanasio, F Zaina and S Negrini\*

Address: ISICO (Italian Scientific Spine Institute), Via Carlo Crivelli 20, 20122, Milan, Italy

\* Corresponding author

from 5<sup>th</sup> International Conference on Conservative Management of Spinal Deformities  
Athens, Greece. 3–5 April 2008

Published: 15 January 2009

*Scoliosis* 2009, **4**(Suppl 1):O27 doi:10.1186/1748-7161-4-S1-O27

This abstract is available from: <http://www.scoliosisjournal.com/content/4/S1/O27>

© 2009 Romano et al; licensee BioMed Central Ltd.

### Background

A previously published systematic review (2003) documented evidence on the efficacy of specific physical exercises to reduce progression of adolescent idiopathic scoliosis.

### Aim

To verify, if the indications for treatment with specific exercises for AIS, has changed in these years.

### Study design

Systematic review.

### Methods

A bibliographic search with strict inclusion criteria has been performed on the main electronic databases and through extensive hand search. We retrieved 19 studies: 1 randomised (RCT) and 8 controlled studies. A methodological and clinical evaluation has been performed.

### Results

The 19 papers included 1654 treated patients and 688 controls. The highest quality study (RCT) compared 2 groups of 40 patients, showing an improvement of the curve in all treated patients after 6 months. We found 3 papers on Scoliosis Intensive Rehabilitation (Schroth), 5 on passive autocorrection-based methods (Schroth, side-shift), 4 on active autocorrection-based approaches (Lyon and SEAS) and 5 with no autocorrection. Apart from one, all studies confirmed the efficacy of exercise in reducing the progression rate and/or improving the Cobb angles.

### Conclusion

Exercise efficacy is proven by an RCT and several controlled studies. In 5 years, 8 more papers have been published in indexed literature coming from all over the world and proving that interest on exercise does not come only from Western Europe.

### References

1. Mallau S, et al.: **Locomotor skills and balance strategies in adolescents idiopathic scoliosis.** *Spine* 2007, **32**(1):E14-22.
2. Simoneau , et al.: **Altered sensory-weighting mechanisms is observed in adolescents with idiopathic scoliosis.** *BMC Neurosci* 2006, **7**:68.
3. Guo X, et al.: **Balance control in adolescents with idiopathic scoliosis and disturbed somatosensory function.** *Spine* 2006, **31**(14):E437-40.
4. Cheng JC, et al.: **Correlation between curve severity, somatosensory evoked potentials, and magnetic resonance imaging in adolescent idiopathic scoliosis.** *Spine* 1999, **24**(16):1679-84.