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## SEAS exercises revert progression of adult scoliosis: a retrospective long-term study

Alessandra Negrini, Stefano Negrini, Silvana Parzini, Michele Romano\*, Fabio Zaina and Salvatore Atanasio

Address: ISICO (Italian Scientific Spine Institute), 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):O55 doi:10.1186/1748-7161-4-S1-O55

This abstract is available from: <http://www.scoliosisjournal.com/content/4/S1/O55>

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### Background

Formal papers regarding the efficacy of exercise in adult scoliosis are few.

### Aim

To verify, if the natural history of adult scoliosis can be modified by exercises.

### Study design

Retrospective pre-post study.

### Population

Thirty one patients (3 males) of  $38 \pm 11$  years and  $55 \pm 14^\circ$  Cobb scoliosis, treated for 3 (range 1–18) years because of progression subjectively perceived (17 patients), or objectively documented (14 patients: sub-group A, previous observation of 10 years, range 1–27), have been included. 6 patients (sub-group B) were observed also after stopping treatment for 6 (3–10) years.

### Methods

Five degrees of Cobb angle was considered significant for clinical change. Statistical analysis included paired t-test, ANOVA, Kruskal-Wallis and chi-square tests.

### Results

Exercises caused a statistically significant decrease of  $3.6 \pm 5^\circ$  of scoliosis ( $-3.2 \pm 4.3^\circ$  per year): 1 patient progressed, 45% improved; in sub-group A results were identical, after a previous worsening of  $9.7 \pm 6.8^\circ$  ( $+2.1 \pm 4.3^\circ$  per year);

in sub-group B stopping exercises caused a progression of  $8.3 \pm 3.8^\circ$  ( $+1.4 \pm 0.5^\circ$  per year). The best results were observed in patients exercising since, even if some patients continued to decrease their curve during the years.

### Conclusion

SEAS exercises revert the progression of adult scoliosis, and a prospective study is already under way. The different results according to length of treatment could be due to a plateau of correction or to an increase of quality of the protocol applied (SEAS changes continuously according to new knowledge in the literature). These results question the immediate need for surgery when facing progression of deformity in adulthood.

### References

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