

The effect of dance performance on idiopathic scoliosis progression in adolescents.

Alessandra Negrini¹, Massimiliano Vanossi¹, Sabrina Donzelli¹, Fabio Zaina¹, Michele Romano¹, Stefano Negrini²

¹ISICO (Italian Scientific Spine Institute), Milan, Italy

²University of Brescia

BACKGROUND

Many spine specialists advise their idiopathic scoliosis (IS) patients to stop dancing for the potential risks related to spine mobility enhancement and flat back related to the typical movements of the dance could determine. The current literature reported a higher prevalence of scoliosis in subjects who practice dance compared to the one found in subjects of the same age.

AIM

To assess the effect of dance practice compared to other sport activities on IS progression in a group of adolescents.

METHODS

Design. Retrospective observational cohort study embedded in a prospective clinical collection started in 2003 in a specialized institute focused to conservative treatment of spine disease.

Participants included: 545 consecutive scoliosis patients (432 fem, 113 male), age ≥ 10 , (12.3 ± 1.3), Cobb at baseline $16.0^\circ \pm 3.5$, juvenile (38) or adolescent IS diagnosis, Risser 0–2, regularly practicing sport activities.

This group was divided into: **Sport Activity group** (SA - 461 participants) performing any kind of sports. **Dance Activity group** (DA – 84 participants) patient performing dance activity.

Outcome measures. Increase ≥ 5 Cobb degrees (IC) at 12 months follow-up -rays. **Exposure.** Dance

activity **Statistics.** Propensity scores were used to reduce the potential effects of confounders related to the observational design. A binary logistic model providing Odds Ratio to compare the outcome of subjects regularly performing dance to subjects performing other types of sports activity the covariate included were:

age,sex,diagnosis,BMI,ATR, Risser and sport type(dancing or other sports).Crude OR guided the choice of covariates to be included into the multivariate analysis.

RESULTS

Dancing is not affecting results, progression of 5 degrees or more is 56% more likely as the ATR increases and 20% less likely in older patients, as shown in the table with the crude and adjusted OR.

Progression >5 Cobb degrees	Crude OR (95% CI)	p value	Adjusted OR (95% CI)	p value
<i>Dancing</i>	0.85 (0.63-1.60)	0.63	0.81(0.43-1.52)	0.52
<i>ATR</i>	1.56(1.04-1.23)	0.001	1.13(1.04-1.23)	0.004
<i>AGE</i>	0.80(0.67-0.95)	0.01	0.77(0.64-0.91)	0.03

Crude and adjusted OR for the progression of 5 Cobb degrees.

CONCLUSIONS

According to the results dancers showed similar risks of progression of patients performing other sports activities. The small sample size is one limit of the study. Larger studies are needed to check the effect of dancing and other sports in the scoliosis population.