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# Postural stability in girls with idiopathic scoliosis

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## Introduction

Idiopathic scoliosis (IS) may be related to decreased postural control of the body. The aim of the study was to investigate the postural control in a group of IS girls compared with healthy girls.

## Material

Eighteen IS girls, aged 12-14 years, mean  $13.2 \pm 0.8$ , mean height  $157.4 \pm 7.0$  cm, mean weight  $47.0 \pm 9.4$  kg, mean BMI  $18.7 \pm 3.0$  and seventeen healthy controls aged 12-14, mean  $13.2 \pm 0.9$ , mean height  $158.5 \pm 7.6$ , mean weight  $50.2 \pm 11.6$ , mean BMI  $19.8 \pm 3.7$  were examined. The Cobb angle varied from 20 to 90 degrees, mean  $39.1 \pm 16.9$  degrees.

## Methods

Standing balance was tested with CQ-STAB force platform: sway pathway (mm), area ( $\text{mm}^2$ ) of the centre of pressure (COP) were measured within the left and the right leg. Dynamic balance with two-leg standing on equilibrium board was studied with DELOS Postural System: platform frontal sway from the horizontal axis ( $^\circ$ ) and trunk frontal and sagittal sway from the vertical axis ( $^\circ$ ). Both static and dynamic examination was performed with eyes open (EO) and with eyes closed (EC). Each condition was tested three times, with the subject given a 2-minute resting period between tests and the best performance was used for statistical analysis.

## Results

All studied parameters revealed higher values when performed with EC than with EO in both groups. No differences of measured parameters performed with EC between groups were found. With EO, the IS group revealed higher values of sway pathway in frontal plane and sway area when standing on a right leg and sway pathway when standing on a left leg.

## Discussion

Small number of subjects in each group is the limitation of the study, however the inclusion of curves being currently within the period of progression is the strong part of it.

## Conclusions

The control of postural stability in girls with IS, being within the period of progression, seems as good as in healthy girls. It was slightly disturbed only on static examination with eyes open.

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