

## **Abstract**

**Title:** Comparison of somatognosia and postural stability between female sports aerobics and gymnasts

**Objectives:** The aim of this thesis is to evaluate asomatognosia, constitutional hypermobility and postural stability in the studied groups (i.e. the group of sport aerobics gymnasts and the group of gymnasts) and their subsequent comparison with each other. Another aim is to determine whether there is a correlation between the different modalities studied, i.e. asomatognosia, constitutional hypermobility, postural stability, ability to evaluate sensory stimuli and body image.

**Methods:** 86 girls and women aged 8-24 years, 41 in the sport aerobics group and 45 in the gymnastics group participated in the study. They were evaluated by the Petrie test, Body attitude test, body size tests (shoulder width test, pelvic width test, foot length test), limbs statesthesia, Beighton score and Y-balance test. Data was collected in the gyms of the participating sports clubs. It was conducted from March 2023 to November 2023. Microsoft Excel 365 and R statistical software (version 4.3.2) were used for statistical data analysis. Selected statistical tests were calculated for 95% significance level. Statistical significance was defined as  $p < 0.05$ .

**Results:** Sports gymnasts showed better asomatognosia in the pelvic region and also better postural stability of both lower limbs. In adolescence, there was a worsening of asomatognosia in the pelvic region and a worsening of postural stability of both lower limbs in both groups studied. In particular, better pelvic asomatognosia and dominant lower limb statesthesia were associated with better postural stability. Postural stability of the dominant lower limb deteriorated with a higher Beighton score. Most of the girls' evaluations of the Petrie test were normal. The Body attitude test in the majority of girls showed an ideal body image.

**Keywords:** Somatognosia, postural stability, constitutional hypermobility, body image, sport aerobics, gymnastics, Beighton score, Y-balance test, Body attitude test, Petrie test.