

# Abstract

**Title:** The effect of manual therapy of the cervical spine on standing balance of violinists measured by CDP

**Objectives:** The intention of this thesis is to describe most frequent functional changes of musculoskeletal apparatus of violinists. Secondly, to track and react to these changes with appropriate manual therapy of the cervical spine. Thirdly, to find out if this therapy has an effect maintaining postural stability by testing on a posturograph using the SOT protocol.

**Methods:** This is a pilot study that uses subjective and objective examinations. Subjectively, the functional changes of the musculoskeletal apparatus were examined and then their frequency within the proband group was evaluated (n = 10, 2 men and 8 women). Within the objective examination, 15 parameters of postural stability were monitored under certain conditions. Using the Wilcoxon Pair Test, situations before and after manual therapy of the cervical spine were compared. The statistical significance level was set to  $\alpha = 0.05$  for this test.

**Results:** The study has shown that violinists have some functional changes in the musculoskeletal apparatus in common. Their most frequent blockade is AO joint (9 out of 10 violinists), the most common hypertonus can be found in flexors of the forearm of the left hand (9 out of 10) and the trapezius and extensors of right-hand forearm (7 out of 10). All parameters for postural stability have changed after manual intervention. There were statistically significant results in four parameters ES1 (p = 0.01), ES5 (p = 0.041), STRA4 (p = 0.022), STRA5 (p = 0.005). Parameter VES was not statistically significant (p = 0.065).

**Keywords:** violinist, postural stability, manual therapy, cervical spine, EquiTest