

Abstract

Title: Effect of Spiral stabilization of the spine on spine and posture in patients with idiopathic scoliosis

Aims: The presented work aims to monitor the effect of regular exercise Spiral stabilization of the spine on idiopathic scoliosis in adult women. The premise of the work was a change in the individual parameters that are monitored for this bachelor thesis and their possible effect on the size of the Cobb angle in these patients.

Methods: The practical part of this bachelor thesis is based on the results of 6 adult women with idiopathic scoliosis who regularly practiced Spiral stabilization of the spine for 7 months. Participants underwent baseline and exit examinations and simultaneously submitted their pre- and post-intervention radiographs. Cobb angle of the major and minor curves, symmetry of the clavicles, hip blades, hip joints, and body axis were measured on the radiographs. Data were collected to assess the range of motion of the spine into anteflexion and hip joint into extension, the ability to activate the oblique abdominal muscles and the muscles involved in the expansion of the rib cage during inspiration and contraction during expiration.

Results: From the aggregated data of the probands it can be concluded that regular Spiral stabilization of the spine exercises can improve the body axis parameter (by 3.6 mm on average), symmetry of lower limb loading (by 1% on average), range of motion of the hip joints into extension (right lower limb by 9 cm on average, left lower limb by 6.4 cm) and range of motion of the spine into anteflexion (Stibor test by 1 cm on average). The results of oblique muscle activation are mixed. The effect of Spiral stabilization of the spine in adult women with idiopathic scoliosis did not appear to reduce the scoliotic curve, the ability to activate inspiratory and expiratory muscles. The change in the parameters related to symmetrization of the position of the clavicles, hip blades and hip joints is questionable. The improvement in these parameters was not significant enough.

Conclusion: The Spiral stabilization of the spine can positively affect posture in adult female patients with idiopathic scoliosis. In particular, the effect of Spiral stabilization exercises on stretching of paravertebral muscles into anteflexion, stretching of the flexors of hip joints, symmetrization of the weight load on lower limbs and body axis was confirmed. However, this

study did not demonstrate an effect of Spiral stabilization on the spine or reduction of the scoliotic curve.