

## **Abstract**

**Title:** Muscle tightness and range of motion analysis of selected upper body segments and its connection to selected parameters of experienced junior golf players swing.

**Objectives:** The aim of this work is to assess muscle tightness, range of motion and golf swing kinematics of experienced junior golf players and to evaluate possible connections between muscle tightness, range of movement and golf swing kinematics

**Methods:** Golf swing kinematics was observed by kinematic analyzer CODA Motion System. Selected parameters of golf swing were: shoulder rotation; pelvis rotation; X – factor; angle between shoulders and left arm. Parameters were measured in key moments of a golf swing: end of backswing; impact. Muscle tightness was measured by clinical test of muscle tightness according to Janda for selected muscles: m. triceps surae; m. iliopsoas; m. rectus femoris; m. tensor fasciae latae; knee flexors; hip adductors; m. piriformis; m. quadratus lumborum; paravertebral muscles; m. pectoralis major; m. trapezius – upper part; m. levator scapulae and m. sternocleidomastoideus. Clinical test of range of motion according to Janda and standard two – arm goniometer was used for range of motion evaluation of selected body segments: hip joint – internal and external rotation, flexion, extension; shoulder joint – internal and external rotation, flexion, horizontal adduction and thorax – rotation. 8 experienced junior golf players participated in this study.

**Results:** Significant connections were evaluated between these parameters: muscle tightness of left knee flexors and pelvic rotation during impact; X – factor during end of the backswing and right thorax rotation range of motion; angle between shoulders and left arm during end of the backswing and horizontal adduction range of motion of left arm.

**Keywords:** golf, golf swing, muscle tightness, range of motion