

## **Abstract**

**Title:** The effect of shoulder girdle stabilization exercises on muscle activity during direct impact in rugby players with sub-acromial impingement syndrome

**Objectives:** Comparison of muscle activity during direct impact while performing the rugby tackle to tackle bag and to player using electromyographic amplitude analysis before and after intervention programme for players with subacromial impingement syndrome (SIS). Application of intervention programme consisting stabilization exercises for shoulder complex and activation of deep stabilization muscles of the spine.

**Methods:** Theoretical part contains topics about shoulder girdle, rugby and rugby injuries, mainly subacromial impingement syndrome. Mentioned issues are included into the thesis due to the research of current literature from international sources and studies. Practical part regards the application of three-months long intervention programme for eight players at junior national level with diagnosis of SIS, when pre-testing a post-testing is realized by clinical tests and EMG measurement. Assessment of enter and control examination is realized with analysis of variance ANOVA.

**Results:** Intervention programme was sufficient for changes in EMG amplitude for two muscle groups in rugby players with SIS. Hypothesis comparing the EMG measure of tackle to the player to tackle to the tackle bag was refused, there was not markable difference while EMG measurement of tackles. Hypothesis concerning the relative increase of EMG amplitude of dynamic stabilizers was confirmed only in case of m. pectoralis major and m. trapezius lower part. Improvement of stabilizing the shoulder was remarkable from kinesiological examination including functional tests, deep stabilization tests, and clinical examination for SIS.

**Keywords:** Shoulder girdle, Rugby, Subacromial impingement syndrome, Tackle, Electromyography, Stabilization exercises.