

## **ABSTRACT**

Title: Comparison of methods of muscle imbalance testing (EMG and functional tests) and the effect of compensatory exercise on these disorders.

Objectives: The main objective of this thesis is to find out whether and to what extent compensatory exercises, which are performed at different time periods, have a positive effect on muscle imbalances of football players. Partial objective is to find out attitude of tested football players' to healthy lifestyle and influence of their eating habits on their physical condition, especially on the share of body fat and muscle imbalance. The second partial objective is to chart eating habits and interest in a healthy lifestyle of adolescent athletes and to create the proposal of bad habits correction and improvement of lifestyle with regard to increased physical load and individual needs of respondents. The objective of this survey is also to find out whether the dietary habits of college and secondary school students in Roudnice nad Labem are influenced by the absence of providing lunches through the school canteen.

Methods: This is a pilot study involving 25 respondents, members of the Football Farm. Their age range was from 14 years up to 18 years. At the time of research 21 respondents were students of colleges in Roudnice nad Labem, 1 respondent was a pupil of 9th grade of elementary school and 3 respondents were students of four-year grammar school in Roudnice nad Labem. As a method to determine muscle imbalances, one of the functional muscle test modifications was selected. There was used a method of deduction and selection in the thesis to modify functional muscle test so that the original battery of 9 exercises was narrowed to 7 selected exercises. Testing of the strength of the large pectoral muscle and hip flexors was removed. Both these groups were identified as less problematic according to experience and observation of the research sample.

Results: Research has shown that compensatory exercise has a positive effect on muscle imbalance. Compensatory exercise helps to reduce or eliminate muscle imbalance. It is necessary to choose a compensatory exercise that corresponds to the detected muscle imbalance, therefore the first step to reduce or eliminate muscle imbalance is its finding.

## **KEY WORDS**

Electromyography, functional tests of muscle imbalance, muscle imbalance, compensatory exercise.