

Abstract

Title: The effect of complex and isolated exercises on maximal strength and muscle hypertrophy

Objectives: The aim of the bachelor's thesis was to determine the effectiveness of single-joint and multi-joint exercises on muscle hypertrophy, maximal and submaximal strength in a non-training population.

Methods: The given isolated and complex training plan was used in the work, where one group performed training containing complex exercises, the other only isolated exercises. The total intervention lasted 15 weeks, with 6 weeks dedicated to the exercise program, 1 week to the output measurement of body composition on the InBody720 device and testing of 1OM, 3OM, 12OM strength performances, according to which the effectiveness of the applied programs was evaluated. The same measurement was carried out in the first week before the start of the intervention itself in the form of an initial measurement. A 14-day break was followed by an exchange of exercise programs for both groups, and the entire cycle was repeated. The Baechle protocol was used to assess maximal strength. Data from the testing were evaluated using statistical functions mean, standard deviation (SMODCH) and using parametric T-tests.

Results: The study found that both isolated and complex exercise plans had a positive effect on the development of maximal and submaximal strength in a non-training population. Furthermore, it was found that both intervention programs had hypertrophic effects in increasing muscle mass and decreasing body fat. The differences between individual groups were not statistically significant.

Keywords: isolated and complex exercises, strength, hypertrophy