

Abstract

Author:

Bc. Petra Harasimová

Thesis supervisor:

Mgr. Vladimír Hojka, Ph.D.

Expert consultant:

PhDr. Jitka Malá, Ph.D.

Mgr. Dominik Kolinger

Title:

Immediate effect of posterior chain facilitation using foam rolling on reactive strength performance.

Objectives:

The main aim of this study is to determine whether the inclination of the trunk towards the vertical changes after foam roller facilitation, whether the magnitude of the jump increases or whether the contact time during reactive force performance is reduced.

Methods:

In this thesis an experiment in the form of a randomized crossover study was used. Fifteen active female athletes with the problem of physiological maintenance of trunk position during running participated in the measurement. Subjects performed repeated snatch jumps over hurdles 57-68 cm in height. For the skip jumps, we measured jump height and support time using an Optojump (Microgate, Bolzano, Italy) and maximal trunk tilt using a video camera (GoPro HERO 9). After the warm-up, probands completed two measurements (pre-test) within 2 minutes. Then, the intervention group of probands performed foam rolling facilitation - m. triceps surae, mm. hamstrings, m. gluteus maximus, m. erector trunci; for each muscle group for 30 s, with a frequency of 1.5 Hz; the control group had rest for the same period. This was followed by three measurements (post-test) after 1 minute, after 3 minutes and after 5 minutes. Probabilistic statistical analysis was performed according to the Hopkins pre-post crossover spreadsheet.

Results:

Foam rolling achieves a positive effect of the therapy due to the straightening of the trunk and shortening of the support phase of the jump in the 5th minute after the intervention, when it achieves the highest probability (92.2% and 96.5%, respectively) of affecting these parameters. This is not the case for the change in jump height, where the effect of the treatment is highly likely (90.8%) to be trivial.

Conclusion:

The use of a foam roller can be recommended as a facilitation method to influence trunk tension and reduce the time of the support phase during jumps. The greatest improvement in these parameters occurs in the 5th minute after the intervention. On the other hand, the work did not confirm the facilitation effect of foam rolling on jump height.

Keywords:

SMR, posterior myofascial chain, plyometrics, snatch jump, hurdle jumping