

Abstract

Title: The influence of foam rolling on range of motion, strength of the knee extensors and flexors and H/Q ratio.

Objectives: The aim of the diploma thesis was to determine the effect of the foam roller on the range of motion and strength of the extensors and flexors of the knee joint. The muscular strength of the knee extensors and flexors was determined using a Humac norm isokinetic dynamometer. Another goal was to determine the effect of the foam roller on the force ratio of extensors and flexors (H / Q) which is an important detail for the prevention of lower limb injuries

Methods: This is an experimental study. The measured research group (n = 12) consisted of the students of the Faculty of Physical Education and Sport at the Charles University. A Black roll foam roller of medium hardness with a non-serrated surface was used. The range of motion of the knee flexors were measured using the sit and reach test and the knee extension test. The range of motion of the knee extensors were measured using a modified Thomas test and Ely's test. The isokinetic strength of the extensors and flexors muscles of the knee joint and the H/Q ratio were measured using a Humac Norm isokinetic dynamometer.

Results: Measurements showed that the foam roller affected the range of motion of the flexors and extensors of the knee joint. The use of the foam roller has not shown to have a positive effect on the muscle strength. The H/Q ratio increased after the foam rolling, but this was due to a decrease in the strength of the knee extensors.

Keywords: foam roller, range of motion, isokinetic dynamometer, strength, H/Q ratio