

## **Bibliographical record:**

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## **Abstract**

This thesis is an EMG study, which examines an electric activity of knee flexors and m. quadriceps femoris during 3 types of exercises: Nordic hamstring exercise, single leg sliding leg curl, and isometric contraction.

The theoretical part summarizes anatomy, physiology, and kinesiology of the musculoskeletal system, as well as the principle of surface EMG. In the experimental part, the EMG study was conducted on 20 healthy individuals aged 20 to 30 years-old. Each patient underwent an applied kinesiology procedure and subsequently went through an 16 channel surface EMG technique. The aim of this work is to compare the maximal and average value of the EMG amplitude of particular muscles during each exercise. While providing Nordic hamstring exercise and single leg slide, the light was shed on a question of whether there is a statistically significant difference between activation of m. biceps femoris and m. semitendinosus in terms of EMG values. The following phase of the thesis scrutinized the timing of hamstring muscles during Nordic hamstring exercises. The overall objective of the discussion is to analyze if it is possible to determine a patient with a higher risk of hamstring strain injury.

## **Keywords**

Nordic hamstring exercises, surface electromyography, isometric contraction, eccentric contraction, rehabilitation, hamstring strain injury