# Kielė, Dovilė, et al,2011\_Sports XL Abstract

## **Balance Alterations Before ACL Surgery And After Rehabilitation**

### Objective

The study's primary aim was to investigate, compare and determine the static and dynamic balance changes before **anterior cruciate ligament** (ACL) surgery and after rehabilitation.

### Results

The results showed that standing on the ACL ruptured leg before surgery and after rehabilitation the oscillations were not significantly different, but standing on the healthy leg after rehabilitation significantly improved. Test results after one-leg hop on ACL ruptured leg showed that oscillations were significantly greater after rehabilitation.

### **Participants and Researchers**

Ten untrained males participated in the study after ACL rupture. All subjects were tested before ACL surgery and after three months of rehabilitation.

The researchers were from the Lithuanian Sports University, Kaunas, Lithuania. They were: *Dovilė Kielė* (and Vilnius College), *Nerijus Masiulis, Vaida Aleknavičiūtė* (and Šiauliai State College), *Rima Solianik; Gintarė Dargevičiūtė*, and *Albertas Skurvydas*.

#### Methods

Two weeks after the surgery the following rehabilitation was applied: physiotherapy with massage and physiotherapy in the water (a pool, three times per week, 16 times in total), and functional **electrical stimulation**. Following these procedures rehabilitation was continued with muscle strength training exercises in a gym.

The physiotherapy procedure took 45 minutes and consisted of muscle strengthening, body balance, coordination, and range of motion improving exercises. The functional **electrical stimulation** procedure lasted 30 minutes using a **NeuroTrac Sport XL** device (Verity Medical).

Balance was measured when a participant stood on a balance platform, with balance measured while standing on one leg and then measured after a one-leg hop for both healthy and ACL ruptured legs.

The full abstract can be found at https://www.researchgate.net/publication/339217222\_Balance\_Alterations\_Before\_A CL\_Surgery\_and\_After\_Rehabilitation