

Abstract:

This thesis is devoted to changes in selected gait and stance parameters in patients with anterior cruciate ligament reconstruction. In the introduction of this work, anatomy and biomechanics of the knee joint are described. Then the thesis deals with the anterior cruciate ligament injury issues, treatment options and associated risks. Last but not least, the possible influence of anterior cruciate ligament reconstruction on sensorimotor and neuromuscular control of human movement and posture is discussed. In the second, experimental part of the work, the objectives of the work and hypotheses are set, then the measurement methodology and results are described. At the end of the work is a discussion, in which the results of this research are compared with current studies. The measurements took place at the Department of Rehabilitation and Sports Medicine at the Motol University Hospital using the Zebris FDM-T System. A total of 36 probands took part in the measurement, 18 of them underwent anterior cruciate ligament plastic surgery on one lower limb and another 18 represented a control group without any injury or surgery on the lower limbs. The results did not show any statistically significant differences in selected parameters of standing and walking between the experimental and control groups, although in some parameters some differences occurred between the two groups. Except for the force parameters mentioned in the last scientific question, this corresponds to the results described in other studies dealing with this topic in terms of standing and walking parameters more than one year after the reconstructive surgery.