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<http://www.ncbi.nlm.nih.gov/pubmed/7571796>

Isokinetic muscle training with high motion speeds in the rehabilitation following surgical treatment of fresh anterior cruciate rupture

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In the course of a prospective investigation 17 patients with operatively treated acute anterior cruciate ligament ruptures received an isokinetic muscle training with high motion velocities in addition to the common physiotherapy from the 7th to the 19th week after operation. The comparative group consisted of 17 patients with operatively treated acute anterior cruciate ligament ruptures who were receiving the common physiotherapy only. The aim of the study was to improve both the postoperative dysbalance between agonists and antagonists and the active muscular stabilisation of the knee. The isokinetic muscle training was done with 150 degrees/s and a motion limit for flexion/extension of 0-20-90 degrees. The postoperative muscular dysbalance was improved significantly in the isokinetic group after 6 weeks of training compared to the control group. The flexion/extension ratio of the operated leg at 60 degrees/s came to 100% in the training group compared to 135% in the control group. This difference was even more apparent at 180 degrees/s with 100% in the isokinetic group compared to 160% in the control group and at 240 degrees/s with 110% compared to 200% respectively. The average maximum torque was 10 to 15% better with the training group as with the control group though there was no training of maximum force done explicitly. There was no effect on the postoperative anterior stability of the knee.

PMID: 7571796 [PubMed - indexed for MEDLINE]