Abnormal landing strategies after ACL reconstruction

JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)

ID 1196687
Author(s) Gokeler, A; Hof, A L; Arnold, M P; Dijkstra, P U; Postema, K; Otten, E
Author(s) at UniBasel Arnold, Markus P. ;
Year 2010
Title Abnormal landing strategies after ACL reconstruction
Journal Scandinavian Journal of medicine & science in sports
Volume 20
Number 1
Pages / **Article-Number** e12-9
The objective was to analyze muscle activity and movement patterns during landing of a single leg hop for distance after anterior cruciate ligament (ACL) reconstruction. Nine (six males, three females) ACL-reconstructed patients 6 months after surgery and 11 (eight males, three females) healthy control subjects performed the hop task. Electromyographic signals from lower limb muscles were analyzed to determine onset time before landing. Biomechanical data were collected using an Optotrak Motion Analysis System and force plate. Matlab was used to calculate kinetics and joint kinematics. Side-to-side differences in ACL-reconstructed patients and healthy subjects as well as differences between the patients and control group were analyzed. In ACL-reconstructed limbs, significantly earlier onset times were found for all muscles, except vastus medialis, compared with the uninvolved side. The involved limbs had significantly reduced knee flexion during the take-off and increased plantarflexion at initial contact. The knee extension moment was significantly lower in the involved limb. In the control group, significantly earlier onset times were found for the semitendinosus, vastus lateralis and medial gastrocnemius of the non-dominant side compared with the dominant side. Muscle onset times are earlier and movement patterns are altered in the involved limb 6 months after ACL reconstruction.
Publisher Blackwell
ISSN/ISBN 1600-0838
edoc-URL http://edoc.unibas.ch/dok/A6006851
Full Text on edoc No;
Digital Object Identifier DOI 10.1111/j.1600-0838.2008.00873.x
PubMed ID http://www.ncbi.nlm.nih.gov/pubmed/19210671
ISI-Number MEDLINE:19210671
Document type (ISI) Journal Article