

ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION: LONG-TERM OUTCOME IN ADULTS AND ADOLESCENTS

Clinical results, health-related quality of life, radiographic findings and bone mineral assessments

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AVHANDLINGEN BASERAS PÅ FÖLJANDE DELARBETEN

- I. Health-related quality of life after anterior cruciate ligament reconstruction.**
Månsson O, Kartus J, Sernert N
Knee Surg Sports Traumatol Arthrosc. 2011;19(3):479-87
- II. Pre-operative factors predicting good outcome in terms of health-related quality of life after ACL reconstruction.**
Månsson O, Kartus J, Sernert N
Scand J Med Sci Sports. 2013; 23(1):15-22
- III. Long-term clinical and radiographic results after delayed anterior cruciate ligament reconstruction in adolescents.**
Månsson O, Sernert N, Rostgard-Christensen L, Kartus J
Am J Sports Med. 2015;43:138-145
- IV. Long-term examination of bone mineral density in the calcanei after ACL reconstruction in adolescents and matched adult controls.**
Månsson O, Sernert N, Ejerhed L, Kartus J
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ABSTRACT

The aim of this thesis was to measure health-related quality of life (HRQoL) and assess pre-operative factors predicting a good outcome of HRQoL after anterior cruciate ligament (ACL) reconstruction. Furthermore, the aim was specifically to assess long-term radiographic findings, clinical results and bone mineral density in adolescents after ACL reconstruction. In Study I, HRQoL was evaluated using the SF-36 questionnaire two to seven years after an ACL reconstruction in 419 patients and compared with a gender- and age-matched Swedish control group (n=2,410). The patient group obtained significantly higher scores for General Health, Social Function, Role Emotional and Mental Health. The control group obtained significantly higher scores for Physical Function compared with the ACL group. After ACL reconstruction, the patients reported good health-related quality of life in comparison with a matched sample of the Swedish population. In Study II, pre-operative predictive factors for a good post-operative clinical outcome after ACL reconstruction were evaluated. Seventy-three ACL-injured patients answered the SF-36 and KOOS questionnaires, three to six years after reconstruction. Predictive factors for HRQoL were investigated using a stepwise regression analysis. Pre-operative factors, such as the pivot-shift test, the manual Lachman test, range of motion, Tegner activity level pre-injury and pre-operatively may predict a good post-operative outcome in terms of HRQoL after ACL reconstruction. In Study III, a long-term follow-up of adolescents after ACL reconstruction was performed. Twenty-nine adolescents were evaluated 10-20 years after ACL reconstruction in terms of the presence of osteoarthritis, clinical assessments and HRQoL. In the long term, patients who were adolescents at the time of ACL reconstruction revealed significantly more radiographically visible osteoarthritic changes in their operated knee compared to their non-involved contralateral knee. However, the clinical outcomes and HRQoL were comparable with those of healthy controls. In Study IV, bone mineral density (BMD) was evaluated in the same 29 adolescents, 10-20 years after ACL reconstruction. The BMD was measured in both calcanei using the DXA (Dual-energy X-ray absorptiometry) technique and compared with a control group of adult ACL-reconstructed patients, as well as a reference database with DXA measurements from healthy age-matched individuals. The BMD in patients who were adolescents at the time of ACL reconstruction differed from a control group and a reference database. In male patients, the BMD value was lower compared with both the control group and the reference database. In female patients, the BMD value was higher compared with the reference database. A decrease of one standard deviation in BMD increases the relative risk of any kind of future fracture 1.5 times. Considering the future fracture risk, it might be of clinical relevance to assess the BMD after ACL reconstruction in adolescents.

Keywords: health-related quality of life, anterior cruciate ligament, reconstruction, bone mineral density, osteoarthritic, radiography, adolescents

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