good interrater and intrarater reliability (Kappa 0.24–0.69 and 0.57–0.63). The Acromial angle classification had moderate to good interrater and intrarater reliability (Kappa 0.53–0.60 and 0.59–0.72). The novel Acromial curve classification showed moderate to good interrater and intrarater reliability (ICC 0.66–0.71 and 0.75–0.78, respectively).

Conclusion The Acromial curve classification was the only classification method with an ICC value > 0.7. The popular Bigliani method had the worst reliability. The Acromial curve classification produces numerical data, as opposed to the other three classification methods. This could potentially be utilized in future research to establishing cut-off values for treatment stratification.

**Introduction**

Exercise therapy comprising exercises for the hip and the knee is recommended for improving pain and function in patients with patellofemoral pain (PFP). However, there is uncertainty about which type of exercises that are most effective. We aimed to assess effectiveness equivalence between two commonly prescribed exercise programs targeting either the quadriceps or the hip muscles in patients with PFP.

**Materials and Methods**

This randomised controlled equivalence trial included 200 participants with a clinical diagnosis of PFP. Participants were randomly assigned to either a 12-week quadriceps-focused (QE) or a hip-focused (HE) exercise program. The primary outcome was the change in Anterior Knee Pain Scale (AKPS) (0–100) from baseline to 12-week follow-up. Prespecified equivalence margins of ±8 points on the AKPS were chosen to demonstrate comparable efficacy. Key secondary outcomes were the Knee Injury and Osteoarthritis Classification (KOOS) pain, physical function, and knee-related quality of life subscales.

**Results**

The least squares mean changes in AKPS (primary outcome) were 7.5 for QE and 7.2 for HE (difference 0.3 points, 95% CI −1.9 to 2.4; test for equivalence p=0.9991). None of the group differences in key secondary outcomes exceeded predefined equivalence margins.

**Conclusion**

12-week focused quadriceps and hip focused exercise protocols were equivalent in changes in symptoms and function for patients with PFP.

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**Introduction**

An essential priority in rehabilitation after anterior cruciate ligament reconstruction (ACLR) is the restoration of knee muscle strength. We aimed to describe quadriceps and hamstrings strength after ACLR of an uncomplicated rehabilitation course, categorized into level of activity and graft type (patellar-tendon – BPTBG, hamstring – HSG).

**Methods**

Isokinetic concentric strength (body weight – BW-adjusted) was measured in 392 athletes (26.2±6.7y) at five time-points (3, 4.5, 6, 7.5, and 9m) following ACLR. Data was analyzed using mixed-effects models and participant specific random effects. Fixed effects included graft type, athlete categorization, and assessment time. We applied Tukey adjustment for multiple comparisons.

**Results**

Professional athletes (HSG) displayed greater quadriceps strength than recreational (BPTBG) at all time-points (except 7.5m). No other significant differences were noted.

Professional and recreational athletes’ quadriceps strength significantly increased through time (irrespective of graft type). Professionals (HSG) reached >2.5 BW quadriceps strength at 6-months, and recreational >2.3 BW at 7.5-months.

Professional athletes showed significantly greater hamstring strength through time (irrespective of graft type). Both athletic categories reached maximum hamstring strength at 6-months post operatively (>1.7 BPTB and >1.5 HS, BW).

Recreational athletes (BPTBG) displayed a significant increase in hamstring strength (1.4 BW, 4.5m), while for recreational athletes (HSG) strength was consistently improving up to 7.5m.

**Conclusions**

Knee strength increases during rehabilitation but at the initial phase of ACLR rehabilitation is influenced by the graft type, while at the end of rehabilitation it is affected by the activity level. The maximum achieved strength is affected mostly by activity level.
Results Overall, boys had significantly higher valgus KFM values than girls across both data collections (P=0.001). Also, a significant interaction between sex and age was observed, where girls and boys demonstrated respectively an increase and decrease in the valgus KFM values from pre-adolescence to adolescence age (13.8% increase vs. 10.6% decrease; P=0.001).

Conclusion The remarkable increase of KFM in adolescent athlete girls may, in part, play a role in their risk of ACL injury, although future studies need to assess the relationship between this increase and rate of ACL injuries.

20 PATIENTS’ LIVED EXPERIENCES OF KNEE INJURY TREATMENT USING INTEGRATED PSYCHOLOGICAL TRAINING OR CARE-AS-USUAL: A PHENOMENOLOGICAL INTERVIEW STUDY

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Results Results indicated that patients in the MOTIFS group perceived increased focus on individualized and activity-relevant meaning during rehabilitation training. This included concrete strategies to influence psychological outcomes, and identifying an explicit biopsychosocial interaction in which confidence, motivation, and enjoyment encouraged both physical and psychological readiness to return to sport.

Conclusion Those in the MOTIFS group described this novel training model as focusing on understanding and providing strategies for coping with psychological factors in rehabilitation and subsequent return to sport. The care-as-usual group perceived a need for more focus on improving psychological well-being. Future research should focus on methods of improving both physical and psychological readiness to return to sport.

25 FUNCTION, STRENGTH, AND OVERALL HEALTH BEFORE AND AFTER SURGICAL OR CONSERVATIVE TREATMENT OF PROXIMAL HAMSTRING AVULSION

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Introduction Proximal Hamstring Avulsion (PHA) is a rare injury and happens with hyperextended knee and hyperflexed hip.

Materials and Methods The aim of the study was to investigate the effect of surgical and conservative treatment of PHA.

Results 13 patients had surgery (mean age 51±15, 46% females, 15 days after injury) and 13 patients had training (mean age 50±17, 46% females, 64 days after injury). In the surgical group, the median PHAT score increased from 41 to 70 to 82 (p<0.001), their overall health: 50 to 80 to 80 (p=0.025) and their HSAS: 0 to 3 to 3 (p<0.01). In the training group, the PHAT score increased from 51 to 68 to 77 (p<0.001). Overall health improved from 69 to 75 to 80 (p=0.025), while HSAS went from 0 to 1 to 1 (p<0.01). Median knee strength improved in the surgical group from 0.22 to 0.67 to 1.07 Nm/kg (<0.001) and in the training group from 0.24 to 0.44 to 0.48 Nm/kg (p<0.001).

Conclusion At 12 months follow-up, both groups improved PHAT and overall health. However, the surgical group improved more in knee flexion strength and were able to participate in sports at a higher level than the training group.