



## 2022 Sports Medicine Australia Conference Oral Abstracts

(014)

### A 2-year prospective randomized controlled trial investigating an accelerated rehabilitation pathway after double-bundle, remnant sparing anterior cruciate ligament reconstruction (ACLR)

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**Introduction:** Anterior cruciate ligament reconstruction (ACLR) is common. Insufficient quadriceps strength and functional hop asymmetry are associated with an increased re-injury risk after ACLR upon return to sport (RTS). This study sought to investigate whether an accelerated rehabilitation pathway after ACLR with a hamstring autograft could enhance strength and functional symmetry after ACLR, without affecting graft laxity and/or re-injury.

**Methods:** A total of 44 patients were allocated to an 'Accelerated' (n=22) or 'Control' (n=22) rehabilitation intervention. While still criterion-focused, the Accelerated pathway permitted an earlier initiation of single limb stance and proprioceptive exercises (2 versus 4 weeks), squat and lunge activities (3 versus 4 weeks), single limb squat variations (5 versus 7 weeks), integration of jump and land exercises (9 versus 12 weeks) and graduated return to running (10 versus 14 weeks). Patients were assessed pre- and post-operatively (6 weeks, 4, 6, 9, 12 and 24 months) with surveys, graft laxity, peak isokinetic knee extensor and flexor strength and a 4-hop performance battery. Limb Symmetry Indices (LSIs) were calculated. Sport participation, secondary operations, ACL re-tears and contralateral ACL tears were reported.

**Results:** No differences ( $p > 0.05$ ) existed in demographics or surveys, apart from the Anterior Cruciate Ligament Return to Sport after Injury (ACL-RSI) score which was significantly better ( $p = 0.001$ ) in the Accelerated group at 12 months. A significantly greater ( $p = 0.006$ ) percentage of Accelerated (77.3%) versus Control (59.1%) patients were participating in Level 1 or 2 pivoting sports at 12 months, though not different ( $p = 0.836$ ) at 24 months (Accelerated 86.4%, Control 85.7%). A significantly higher knee extensor strength LSI was observed in the Accelerated group at 6 ( $p < 0.0001$ ), 12 ( $p = 0.010$ ) and 24 ( $p = 0.005$ ) months, as was a significantly higher LSI for the triple hop for distance at 6 ( $p = 0.015$ ) and 9 ( $p = 0.008$ ) months, and the triple crossover hop for distance at 6 ( $p < 0.0001$ ) and 9 ( $p = 0.009$ ) months. No laxity differences or contralateral tears were observed, with one ipsilateral re-tear

(Control group, 17 months). Four re-operations were undertaken, including n=1 in the Accelerated (meniscectomy) and n=3 in the Control (three meniscectomies) group.

**Discussion:** The accelerated pathway produced earlier improvement in strength and hop LSIs which have been linked with re-injury in patients that RTS after ACLR. Importantly, the accelerated regimen and increased early participation in pivoting sports was not associated with an increase in graft laxity or graft re-injury.

**Impact and Application to the Field:** Current evidence has demonstrated a link between strength and hop asymmetry and an increased re-injury risk in patients who RTS after ACLR. The current study has shown that a structured, accelerated rehabilitation pathway with therapist progression and oversight, can enhance these physical outcomes, without an increase in graft laxity and/or an elevated re-injury risk.

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(015)

### A randomised controlled trial of autologous tenocyte versus corticosteroid injection for interstitial rotator cuff tear and impingement syndrome

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**Introduction:** Interstitial supraspinatus tears can cause persistent subacromial impingement symptoms. This is the first comparative study to investigate safety and efficacy of Autologous Tenocyte Injection (ATI) compared to corticosteroid injection (CS) for interstitial rotator cuff tears.

**Methods:** Thirty participants were randomised to receive ATI (n=19) to the interstitial tear or CS (n=11) to the subacromial bursa under ultrasound guidance, in a 2:1 randomisation ratio. Inclusion criteria were duration of symptoms >6 months, magnetic resonance imaging (MRI) confirmed intrasubstance supraspinatus tear, and had previously undergone physiotherapy and at least one CS injection. Of the enrolled cohort, 20 (67%) were male, the mean age was 50.5 years (SD 8.5, range 30-63) and the mean DOS was 21.8 months (SD 12.1, range 7-