

increased pain during walking compared to active individuals. Further research is required to investigate subgroups in a clinical population with GTPS.

48 HAMSTRING MUSCLE ACTIVATION DURING SINGLE LEG JUMP AFTER ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION WITH A SEMITENDINOSUS GRAFT

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Introduction Few studies have used electromyography (EMG) to assess hamstrings function after anterior cruciate ligament reconstruction (ACLR). The purpose of this study was to identify inter-limb differences in muscle activity of the semitendinosus (ST) and the long head of the biceps femoris (BFLH) after ACLR while accounting for the muscles' mass, as measured with ultrasound.

Materials and Methods Twenty athletes (age 18–28) who had undergone ACLR with a graft harvested from ST partook in the study. Electrodes were placed over the midbelly of ST and BFLH bilaterally. Peak muscle activity was measured during three good trials of a single leg jump and normalized to the signal obtained during a maximal voluntary isometric contraction. Ultrasound was used to measure muscle mass. Processing was conducted in Visual 3D, while mixed model statistical analysis was performed with Jamovi.

Results Peak activation of BFLH was higher than ST across both sides ($p < 0.001$) and activation of both muscles was generally higher on the injured vs. uninjured side ($p < 0.001$). Muscle mass of ST on the injured side was negatively correlated with muscle activity, while the correlation was positive on the uninjured side (interaction; $p < 0.001$). No correlation was found between muscle mass and BFLH muscle activation (n.s.).

Conclusion The use of ST for ACLR not only has a significant effect on the muscle's mass but also influences muscle contraction levels of the injured limb. Prospective intervention studies are needed to determine whether specific post-surgical intervention may positively influence long-term muscle mass and activation, and lower limb function.

49 THE SPRINT MECHANICS ASSESSMENT SCORE (S-MAS): A RELIABLE TOOL ASSESSING IN-FIELD SPRINT RUNNING MECHANICS ASSOCIATED WITH HAMSTRING STRAIN INJURIES

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Introduction Qualitative movement screening tools have been developed across several activities, aiming to identify mechanical patterns associated with potential injury risk. Although sprint running mechanics are thought to influence hamstring strain injuries (HSI), there are currently no field-based screening tools available allowing quick assessment. Therefore, this

study aimed to determine the intra- and inter-tester reliability of a novel, easy-to-use qualitative screening tool assessing sprint running mechanics (The Sprint Mechanics Assessment Score [S-MAS]).

Materials and Methods The S-MAS is a 12-item scoring tool, developed following a literature review of biomechanical parameters associated with HSI and consultation with sprint coaches.

Slow-motion videos were collected from 36 elite football players (18 female, 18 male) performing maximal velocity sprints.

Two assessors, blinded to each other's results, independently scored all videos. One assessor (blinded to testing session one scores) scored the same videos in a randomised order 1 week later.

Results Interclass correlation coefficients showed good intra-tester (ICC = .828, 95%CI = .688-.908) and inter-tester (ICC = .799, 95%CI = .642-.892) reliability for overall S-MAS with a standard error of 1 point. Intra-tester and inter-tester percentage agreements for individual items ranged from 75–88% and 66–89% respectively. No significant sex ($p = .597$) or inter-limb ($p = .094$) differences were observed for overall score.

Conclusion The S-MAS is a reliable tool assessing sprint running mechanics in both male and female footballers. The easy-to-use nature of the S-MAS means it can be integrated into practice, providing an in-field method of screening sprint mechanics commonly associated with HSI.

50 THE ASSOCIATION BETWEEN THE SPRINT MECHANICS ASSESSMENT SCORE (S-MAS) TO RETROSPECTIVE AND PROSPECTIVE HAMSTRING STRAIN INJURIES IN ELITE FOOTBALL PLAYERS

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Introduction Sprint running mechanics are thought to be a risk factor for Hamstring Strain Injuries (HSI). However, there is limited evidence to support this association, which may be explained by the lack of in-field assessment methods to evaluate sprint running mechanics.

This study aimed to investigate whether a new qualitative screening tool, the Sprint Mechanics Assessment Score (S-MAS), can identify differences in running mechanics between players who have sustained a HSI in the last 12 months (Prior HSI), those prospectively sustaining a new HSI, and controls.

Materials and Methods Maximal velocity sprint running videos (240fps) were collected from 79 elite football players (18 female, 61 male) in the English Football League. A blinded assessor scored all videos using the S-MAS (12-point qualitative screening tool for sprint mechanics).

Mann-Whitney U tests were used to compare S-MAS between injured groups (Prior HSI, $n=12$ and New HSI, $n=3$) to sex-matched controls ($n=41$).

Results Mean S-MAS for the Prior HSI group (6.2, SD 1.9) were significantly greater than controls (4.4, SD 2.4) ($p < .05$, Effect size (ES) = 0.76). Players sustaining a new HSI also displayed greater S-MAS scores compared to controls (mean