Introduction Pain provocation tests are used to examine and classify longstanding groin pain into clinical entities as adductor-, iliopsoas-, inguinal- and pubic-related. It is unknown if pain provocation tests and clinical entities are associated with pain intensity and disability. We aim to investigate if the number of positive pain provocation tests and clinical entities are associated with pain intensity and disability, measured by the five-second squeeze test (SSST) and the Hip And Groin Outcome Score (HAGOS), respectively.

Materials and Methods Forty male footballers (mean 24 [SD: 3.2] years; 182 [5.7] cm; 78 [6.6] kg) with longstanding groin pain (≥ 6 weeks) for a median of 8.5 (IQR: 4–36) months were included. They underwent a bilateral groin examination with 33 pain provocation tests and were classified with clinical entities (0–7) based on test findings.

Results The number of positive tests (median 10, range 2–23) correlated with pain intensity (SSST rs = 0.70 [95% CI: 0.50, 0.83]) and disability (HAGOS subscales r = Sport -0.62 [-0.81, -0.36], Pain -0.38 [-0.69, -0.06], Symptoms 0.52 [-0.73, -0.24], ADL -0.48 [-0.71, -0.18]). The number of clinical entities (median 3, range: 1–7) showed similar but weaker correlations to pain intensity and disability.

Conclusion In footballers with longstanding groin pain, the number of positive pain provocation tests and clinical entities shows weak to strong correlations with pain intensity and disability. Consequently, when pain intensity and disability are severe, a higher number of positive pain provocation tests in the region are present, and more clinical entities are present.

Introduction A clavicle fracture change the mechanical axes of the shoulder girdle, potentially leading to scapular protraction and decreased subacromial space. Clavicle fractures could therefore predispose to later development of subacromial impingement syndrome (SIS).

The purpose of this study was to investigate if clavicle fractures were correlated with a higher incidence, or earlier diagnosis, of SIS.

Materials and Methods This was a case-control study with data from the Danish National Patient Register. Persons, aged 18–60 years, with a hospital contact due to a clavicular fracture (DS420) between 1.1.1996 and 31.12.2005 were identified. For each case, 5 matched (sex and age) controls were identified. Primary outcome was the first hospital contact with a SIS diagnosis (DM751–755) registered >180 days following a clavicle fracture. Patients were followed until 01.11.2021.

Results 21,973 cases and 109,865 controls were included. 23% were female. 1,640 (7.46%) cases and 8,072 (7.35%) controls later received a SIS diagnosis, demonstrating no significant difference in incidence of SIS diagnosis (p=0.56).

1,614 cases underwent surgical fixation. This subgroup had a statistically significant higher incidence of receiving a SIS diagnosis later in life (205 cases, 13%, p<0.001).

Mean time from fracture to SIS diagnosis was shorter for cases compared to controls (4040 vs. 4442 days, p<0.001), and cases were slightly younger when receiving the diagnosis (51.3 vs 53.6 years, p<0.001).

Conclusion Clavicle fracture patients did not have an increased incidence of a later SIS diagnosis, but were slightly younger at time of diagnosis. Surgery was correlated with higher incidence of diagnosis.
increased pain during walking compared to active individuals. Further research is required to investigate subgroups in a clinical population with GTPS.

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

Kristín Briem*, Páll Steinar Sigurbjörnsson, Hilmar Kristjánsson, Árni Árnason. University of Iceland, Saemundargata 2, Iceland

10.1136/bmjsem-2023-sportskongres2023.18

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 semitendinous (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 paratook 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.

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

1,2Chris Bramah*, 3,4Thomas Dos’Santos. 1School of Health and Society, University Of Salford, UK; 2Manchester Institute of Health and Performance, UK; 3Speedworks Training, UK; 4Nuffield Health, UK; 5Department of Sport and Exercise Sciences, Musculoskeletal Science and Sports Medicine Research Centre, Manchester Metropolitan University, UK; 6Manchester Institute of Sport, Manchester Metropolitan University, UK

10.1136/bmjsem-2023-sportskongres2023.19

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 intratester (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.