

Background Understanding the risk of concussion and how this injury occurs in rugby union match play can inform future injury reduction strategies. This has been investigated in professional rugby but not in the UK elite level pathway.

Objective Describe the incidence of concussion and characteristics of tackles resulting in concussion in British University rugby union.

Design A one-season prospective cohort study; team medical staff reported match play concussions. Matches were filmed and tackle-related concussions were analysed alongside 796 non-injurious 'control' tackles.

Setting British University and Colleges (BUCS) 'Super' rugby union: season 2018/19.

Participants Eight teams (341 players).

Independent variables Match exposure.

Main Outcome Measurements Injury incidence and characteristics of tackles associated with concussion.

Results There were 43 concussions in 154 team games; incidence was 14.0 per 1000 player match hours (95% CI: 10.1–18.8) and mean absence was 23 days (95% CI: 16.1–29.9). Thirty-four (79%) concussions occurred in the tackle; 22 by the tackler and 12 by the ball carrier. Twenty-five tackles resulting in concussion could be conclusively identified on video (tackler: 16; ball carrier: 9). For control tackles, 5% resulted in initial impact to the head/neck and 18% to the shoulders of the ball carrier compared with tackles resulting in concussions to the ball carrier [head/neck, 3 (33%); shoulder, 2 (22%)] or tackler [head/neck, 2 (13%); shoulder, 3 (19%)]. For tackler concussions, 3 (19%) involved head-to-head contact (2% of control tackles) and 4 (25%) involved head-to-shoulder contacts (6% of control). The ball carrier was travelling at high speed for 67% of ball carrier concussions, compared with 29% for control tackles.

Conclusions Concussion incidence in high-level university rugby union is slightly lower than professional rugby with most concussions occurring in the tackle. Lowering tackle height may help reduce concussion for the ball carrier and the tackler should prioritise head positioning away from the ball carrier's head and shoulders.

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DOES THE OSLO SPORTS TRAUMA RESEARCH CENTER SHOULDER INJURY PREVENTION PROGRAM AFFECT THE RISK FACTORS EXTERNAL ROTATION STRENGTH AND INTERNAL ROTATION RANGE OF MOTION? A RANDOMIZED CONTROLLED STUDY AMONG ADOLESCENT HANDBALL PLAYERS

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Background Shoulder problems are common in handball, but preventable. However, player compliance remains a challenge, as the existing prevention program is time consuming.

Objective To assess the effect of the Oslo Sports Trauma Research Center shoulder injury prevention program on external rotation (ER) strength and internal rotation (IR) range of motion (ROM), believed to represent key risk factors for injury.

Design Randomised controlled trial, single blinded

Setting Youth handball players (16–18 yrs)

Participants Four youth handball teams (three female, one male, 57 players, mean age 17.1 yrs) were randomly selected from eligible teams in the Oslo region, and randomized to an intervention group (28 players) or control group (29 players).

Interventions The Oslo Sports Trauma Research Center shoulder injury prevention program was implemented during regular handball warm-up three times a week for 18 weeks in the intervention group.

Main Outcome Measurements The main outcome variable was the between-group difference in ER strength and IR ROM change from baseline to post intervention. Isometric ER strength was measured with a handheld dynamometer and IR ROM with a digital goniometer.

Results Mean dominant shoulder isometric ER strength increased significantly both in the intervention (10%) and the control group (6%) during the intervention, but there was no significant group by time interaction (group difference: 0.06 N/kg (95% CI: -0.04 to 0.17). IR ROM did not change in either group during the intervention.

Conclusions The Oslo Sports Trauma Research Center shoulder injury prevention program did not affect the risk factors ER strength and IR ROM. The preventive effect of the program must therefore be due to other factors.

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SPRAIN[®] REDUCES THE RISK OF LATERAL ANKLE SPRAIN INJURY AMONG INDOOR SPORT ATHLETES: A PILOT RANDOMIZED CONTROLLED TRIAL WITH 510 PARTICIPANTS

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Background High shoe-surface friction is a proposed risk factor for 'non-contact' lateral ankle sprain (LAS) injuries. Spraino[®] is a novel product that minimizes friction at the lateral edge of the shoe, thereby potentially mitigating the risk.

Objective To determine preliminary effect and safety of Spraino[®] when used to prevent LAS injury among indoor sport athletes.

Design A double-blinded, prospective, two-arm pilot randomised controlled trial (RCT). Participants were allocated (1:1) to Spraino[®] or to a 'do-as-usual' control group. The random allocation was concealed for investigators and participants. Group allocations were outcome-assessor-blinded.

Setting Indoor sports clubs competing at divisional- or league level in handball, badminton and basketball in Denmark.