

greater weekly mean NMT sessions [OR=0.282, (95%CI: 0.090–0.882)].

Conclusions Predictors of non-response to NMT in youth include being female, playing basketball, and history of injury. Better balance was associated with lower odds of injury. Higher weekly adherence was protective in female soccer players.

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OUTCOME PREDICTORS FOR RECOVERY OF ROTATOR CUFF TENDINOPATHY: AN INTERNATIONAL PROSPECTIVE COHORT STUDY

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Introduction There is inadequate data about outcome predictors for rotator cuff (RC) tendinopathy recovery. This international prospective cohort study aimed to determine outcome predictors of RC tendinopathy recovery and build an explanatory model.

Materials and Methods After completing the baseline survey, which included over 40 potentially plausible bio-psycho-social and demographic variables, recovery was assessed using the Global Rating of Change scale at monthly follow-ups for one year. Univariate cox proportional-hazards regression was used to analyse individual predictive associations, and multivariate cox regression was used for model building. Bootstrapping was used for internal validity.

Results 73 people with RC tendinopathy (43.9±14.0 years; 45 females; Shoulder Pain and Disability Index = 37.7±24.4) provided 15,284 days total analysis time at risk (208±129 days). Recovery rate was 47%, occurring around the 7th month. According to the final model, higher health status (HR = 1.03) and being moderately active (HR = 2.23) were associated with RC tendinopathy recovery. The internal validity showed that there was minimal overestimation in the predicted outcome (average optimism=0.01). The model partially predicted RC tendinopathy recovery with almost acceptable performance (optimism-corrected Harrell's C discrimination = 0.66 and Calibration Slope = 0.99).

Conclusion Self-reported online surveys may be useful to understand RC tendinopathy prognosis. The combination of self-reported factors, including activity level and health status, partially predicted RC tendinopathy recovery. Therefore, these modifiable self-reported variables could help guide clinical decision making.

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CARBOHYDRATE AVAILABILITY IN FEMALE ENDURANCE ATHLETES WITH SYMPTOMS OF RELATIVE ENERGY DEFICIENCY IN SPORT (RED-S)

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Introduction Endurance athletes with high training loads and weight focus have increased risk of low energy and carbohydrate (CHO) availability. This is the first study aiming to investigate the timing of CHO intake in relation to training load in athletes with symptoms of relative energy deficiency in sport (RED-S).

Materials and Methods Female endurance athletes (n=12) (25.9 ± 4.4) years, BMI 20.9 ± 2.1), with symptoms of RED-S (Low Energy Availability in Females Questionnaire total score 11.9 ± 2.9) without disordered eating behavior, performed a 7-day weighed dietary and training registration (heart rate monitors, online training logs). CHO intake was analyzed for key (high intensity/>120 min) and easy training sessions (all other sessions >30 min) as well as hard (including >1 key session) and light training days (all other days). Mean difference, 95% confidence intervals (CI) not including 0, and a paired student t-test were used to determine differences between CHO intake and international sport nutrition recommendations.

Results None of the participants met the recommended daily CHO intake [CI -1.7 (-2.4 to -0.9)], or CHO intake immediate after [CI -0.7 (-0.9 to -0.5)], between [CI -1.2 (-2.0 to -0.4)] or during [CI -15.2 (-29.1 to -1.3)] key training sessions. CHO recommendations were more difficult to fulfill during hard compared to light training days (p=0.014).

Conclusion Female endurance athletes with symptoms of RED-S have difficulties matching CHO intake in relation to training load according to the recommendations. Hence, to prevent RED-S focus on optimizing CHO intake is needed.

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MENISCAL SURGERY OR EXERCISE THERAPY IN ALLEVIATING PATIENT-REPORTED MECHANICAL SYMPTOMS IN YOUNG ADULTS WITH A MENISCAL TEAR

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Introduction A common treatment strategy to alleviate mechanical symptoms in young patients with meniscal tears is meniscal surgery, however, it is unknown whether this is superior to a non-surgical strategy. Therefore, we aimed to compare meniscal surgery to early exercise therapy and patient education.

Materials and Methods In the DREAM trial 121 patients aged 18–40 were randomized to surgery (partial meniscectomy or meniscal repair) or 12-weeks of supervised exercise therapy and patient education, with the option of later surgery if needed. In this secondary analysis we included patients with self-reported mechanical symptoms (yes/no) at

baseline. Patients were followed for 12 months and assessed for the presence of mechanical symptoms at 3, 6 and 12 months.

Results In total, 63/121 patients reported mechanical symptoms at baseline (surgery, n=33 and exercise, n=30), while 9/26 in the surgery group and 20/29 in the exercise group reported mechanical symptoms at 12-month (missing data on 8 patients). During follow-up 8 patients crossed over from the exercise group to use the opportunity for later surgery.

At 12-month the risk difference was 34.4% (95% CI 9.5–59.2) and the relative risk was 1.99 (95%CI, 1.11–3.57) in favour of the surgery group. Similarly, a larger proportion of patients in the exercise group reported mechanical symptoms at 3 and 6 months.

Conclusion Our results suggest that meniscal surgery may be superior in alleviating mechanical symptoms compared with exercise therapy and patient education with the option of later surgery in young patients with meniscal tears and self-reported mechanical symptoms.

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TERMINOLOGY AND DIAGNOSTIC CRITERIA USED IN CLINICAL STUDIES INVESTIGATING SUBACROMIAL IMPINGEMENT SYNDROME: A SCOPING REVIEW

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Introduction Lack of consensus regarding terminology and diagnostic criteria used to describe and identify patients with subacromial impingement syndrome (SIS) could be an important driver of misconceptions and misinterpretations of scientific results in this population. We aim to map the literature regarding terminology and diagnostic criteria used in clinical studies investigating SIS.

Materials and Methods PubMed, Embase, CINAHL and SPORTDiscus were searched from inception to June 2020 using known terms for SIS. Peer-reviewed clinical studies investigating SIS were eligible for inclusion. Studies containing secondary analyses of a previously published study, reviews, pilot studies and studies with less than ten participants were excluded. Two reviewers independently screened titles and abstracts, three reviewers independently applied inclusion and exclusion criteria to full-text versions of the articles and one reviewer extracted data. Disagreement between the reviewers was resolved through dialogue.

Results 11,056 records were identified. 911 were retrieved for full-text screening. 535 were included. 20 different terms for SIS were identified. The diagnostic criteria were generally based on a cluster of pain provocative shoulder tests. 134 different diagnostic criteria were identified. 30% of the studies used a combination of clinical tests and imaging. 9% of the studies specified that they included patients with full-thickness supraspinatus tears and 46% specified that they did not.

Conclusion There is a worrying lack of consensus regarding terminology and diagnostic criteria for SIS. This calls for careful consideration when interpreting the results of studies investigating SIS and when comparing studies.

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GOOD RESULTS OF SURGICALLY TREATED PEDIATRIC KNEE LIGAMENT INJURIES IN DENMARK 2011–20 AT ONE-YEAR FOLLOW-UP

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Introduction Prospective data on treatment outcome from unselected cohorts of children with anterior cruciate ligament (ACL) injury are sparse. Since 2011 the surgical treatment of children with ACL injury in Denmark has been concentrated at two centers. The aim was to present one-year results after pediatric ACL-reconstruction in Denmark for the period 2011–20.

Materials and Methods Consecutive children (< 16 years old) who had an ACL-reconstruction were prospectively followed with patient reported outcome measure Pedi-IKDC, pivot shift and instrumented laxity before surgery and one year later. One-year follow-ups were performed by independent observers.

Results A total of 518 children had an ACL-reconstruction. Median age: 14.6 years (range 8–16) and 45% were girls. A quadruple semitendinosus or a doubled semitendinosus-gracilis autologous tendon was used as graft in all but one child. Pedi-IKDC score was 57.0 preoperatively and 85.7 at 1-year (maximum score 92). Side-to-side difference of instrumented anterior laxity was 4.25 mm preoperatively and 1.3 mm at follow-up. Pivot-shift was preoperatively/at 1-year: no pivot: 3/22%, grade 1: 20/56%, grade 2: 74/21%, and grade 3: 3/1%. Two (0.3%) had an operatively treated deep infection, 3 (0.5%) were treated for reduced range of motion, 2 (0.3%) for a cyclops, and 4 (0.7%) had a rupture of the graft.

Conclusion ACL reconstruction resulted in a large increase in Pedi-IKDC score, a large decrease of instrumented laxity, and a reduction of pivot shift. Complication rate was low and 1-year re-rupture rate was 0.7%.

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MUSCLE STRENGTH TESTS IN INDIVIDUALS FOLLOWING AN ANTERIOR CRUCIATE LIGAMENT OR MENISCUS INJURY: A SYSTEMATIC REVIEW OF MEASUREMENT PROPERTIES (OPTIKNEE)

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Introduction There is a lack of consensus on the most relevant and clinically applicable tests to evaluate knee muscle strength