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A SINGLE BOUT OF ECCENTRIC EXERCISE INCREASES THE GENE EXPRESSION OF NESTIN AND OSTEOCRIN IN HUMAN MYOTENDINOUS JUNCTIONS

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Introduction The myotendinous junction (MTJ) has a unique transcriptional activity and is highly susceptible to strain injury. Eccentric exercise reduces this risk of injury, but the mechanism is unknown. The aim of this study was to investigate the effect of a single bout of eccentric exercise on the expression levels of some of the genes known to be active at the MTJ.

Materials and Methods 30 subjects were randomized to a single bout of eccentric exercise 1 week prior to tissue sampling or no exercise (control). Samples were collected from the semitendinosus muscle and were divided into fractions containing muscle, MTJ and tendon, respectively. The concentrations of macrophages and satellite cells were counted, and the expression of genes previously demonstrated to be active at the human MTJ were analysed by RT-qPCR.

Results The expressions of nestin and osteocrin mRNA were significantly increased in the MTJ and tendon fractions in the exercise group. In the exercise group a higher concentration of macrophages, but not satellite cells, was seen in the muscle tissue near the MTJ.

Conclusion Eccentric exercise leads to increased expression of nestin and osteocrin in human semitendinosus MTJ and to macrophage infiltration but does not induce proliferation of satellite cells near the MTJ. The increase in nestin and osteocrin indicates that these proteins could be of interest for the understanding of how the MTJ adapts to eccentric exercise and how eccentric exercise protects against strain injury.

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ROCKWOOD TYPE III IS THE MOST COMMON TYPE OF AC JOINT DISLOCATION: A PROSPECTIVE COHORT STUDY

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Introduction Acromioclavicular (AC) joint dislocations are common injuries accounting for 9–12% of all injuries to the shoulder girdle. This frequency is widely reported in the literature, but basic epidemiological features and sub-classification is not well investigated in a general urban population. The aim of the study was to investigate the incidence and epidemiology of acute AC joint dislocations in the capital region of Denmark

Materials and Methods All patients with acute AC joint dislocation admitted to the Emergency Departments at three University Hospitals serving a population of 549,225 residents in

the Capital region of Denmark were prospectively registered from 1 January to 31 December 2019. Patients with trauma to the shoulder, pain from the AC joint and increased coracoclavicular distance on radiographs were included and classified according to Rockwood's classification. Data on age, sex and mechanism of injury were registered.

Results 106 patients, male:female ratio 8.6:1, were included. Rockwood type III was the most common type accounting for 55.7% of the injuries. The overall incidence of AC joint dislocations was 19.3 per 100,000 person years at risk (PYRS). The age distribution was bimodal peaking at the ages of 20–24 and 55–59. The most common mechanism of injury was sports accounting for 80/106(75.5%) with cycling accounting for 51/106 (48.1%).

Conclusion Rockwood type III was the most common type of AC joint dislocation constituting 55.7% of the injuries. The incidence of AC joint dislocations was 19.3 per 100,000PYRS. Young and middle-aged males were at highest risk and most injuries occurred during sports.

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PATIENT REPORTED OUTCOME MEASURES FOR ANKLE INSTABILITY – QUALITY ASSESSMENTS OF 17 EXISTING QUESTIONNAIRES

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Introduction The aim was to evaluate content validity and measurement properties of patient reported outcome measures (PROMs) to assess patients with chronic ankle instability (CAI).

Materials and Methods Potential PROMs for CAI and validity studies of these were identified in PubMed and SCOPUS. Development and validation methods for all PROMs were analyzed.

Results Seventeen PROMs were relevant for CAI, and 56 validity studies were identified for the quality assessment. Only three PROMs had been developed with inputs from patients and were potentially adequate: the Cumberland Ankle Instability Tool (CAIT), the Lower-Extremity Functional Scale (LEFS) and the Foot and Ankle Ability Measure (FAAM).

Measurement properties of CAIT has never been validated by modern test theory models (MTT), which are optimal for this purpose. In addition, CAIT is used to identify the presence of instability and not to evaluate the condition. Four analyses of LEFS with MTT methods for patients with an CAI have shown inadequate fit to the statistical model. For FAAM one study including CAI patients found adequate fit to the statistical model.

Conclusion Fourteen (of seventeen) PROMs had been developed without involvement of patients and must be considered as inadequate measurement instruments. Of the three PROMs developed with patient involvement, only FAAM exhibited fit to the statistical model for patients with CAI. However, for other conditions evidence for construct validity for FAAM is inconsistent.

No existing PROM possesses adequate content and construct validity for patients with CAI, but FAAM is suggested to be the best choice.