

MD (21.4% vs. 6.3%, $p=0.084$) and DE (17.9 vs. 6.3%, $p=0.162$) risk proportions were not significant.

The results provide evidence that exercise addiction and muscle dysmorphia, and associated health behaviors, are factors to consider when assessing risk of LEA.

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SUCCESSFUL ISOLATION OF VIABLE STEM CELLS FROM CRYOPRESERVED MICROFRAGMENTED HUMAN ABDOMINAL ADIPOSE TISSUE FROM PATIENTS WITH KNEE OSTEOARTHRITIS

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Introduction Treatment of knee osteoarthritis with stem cells from microfragmented adipose tissue (AT) has shown promising results. Cryopreservation and biobanking of stem cells are important for research, treatment of aged patients, and for repetitive treatments. Our aim was, therefore, to investigate if viable stem cells could be isolated and expanded from cryopreserved microfragmented AT by two different isolation methods.

Materials and Methods Microfragmented abdominal AT from knee osteoarthritis patients was cryopreserved at -80°C in cryoprotectant-medium containing 10% dimethyl sulfoxide. The samples were thawed for stem cell isolation by tissue explant culture (TEC) and enzymatic digestion (ED), respectively. Viability, population doublings, and doubling time were assessed by trypan blue staining. Cell type was investigated using flow cytometry. Osteogenic and adipogenic differentiation was assessed quantitatively by Alizarin-Red-S and Oil-Red-O staining, respectively. Statistical analysis was performed using paired t-tests. p -values <0.05 were considered statistically significant.

Results Microfragmented AT from 7 patients was cryopreserved for a period of 46–150 days (mean (SD) 115.9 days (44.3 days)). Viable stem cells were successfully recovered and expanded from all patients using both isolation methods with no significant difference in viable population doublings or doubling time from passage 1 to 3 ($p>0.05$). Stemness was verified by surface markers and osteogenic and adipogenic differentiation. More pericytes were present when using TEC (25% (24%)) compared to ED (2% (2%)) at passage 4 ($p=0.04$).

Conclusion Viable stem cells can be isolated and expanded from cryopreserved microfragmented AT using both TEC and ED. TEC provides more clinically relevant pericytes than ED.

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CONCUSSION INCIDENCE AMONGST YOUTH HANDBALL PLAYERS PARTICIPATING IN THE HEALTH AND PERFORMANCE PROMOTION IN YOUTH SPORT (HAPPY) RANDOMIZED CONTROLLED TRIAL

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Introduction Knowledge of concussion in handball is limited. The aim of this study is to determine the incidence of concussion in Danish youth community handball.

Materials and Methods 758 players aged 11–17 years were followed prospectively as a part of a randomized controlled trial. Handball playing hours and head traumas were monitored weekly by the Oslo Sport Trauma Research Center Health questionnaire (OSTRC-H2) and a concussion specific question over 21 weeks using the app Athlete Monitoring. Players reporting a head injury via the OSTRC-H2 questionnaire or answered yes to the concussion specific question underwent a standardized 5–10-Minute telephone interview within 1 week.

Cases of concussion was defined according to the Consensus in Sport Group. Handball playing hours was defined as time spend in handball training and match. Incidence is reported as cases per 1000 playing hours.

Results 44 cases of concussion were identified. Overall incidence of concussion was 0,94 per 1000 hours [95% CI; 0,68–1,26]. Female athletes sustained twice as many concussions than male athletes (incidence rate ratio (IRR) 2,20 [95% CI; 1,09–4,84]). Concussion happened 9 times more often during match compared to training (9,09 [95% CI; 4,72–18,25]). No statistically significant difference in IRR between age groups (U13/U15 vs. U17; IRR 1,48 [95% CI; 0,59–3,24]) was found.

Conclusion This is the first study reporting concussion incidence in youth handball. Incidence was higher amongst female handball players compared to males and in match versus training. No difference in concussion incidence was found between age groups.

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DOES AN ACTIVITY MODIFICATION STRATEGY FOR ADOLESCENTS WITH PATELLOFEMORAL PAIN AND OSGOOD-SCHLATTER AFFECT SEDENTARY TIME? AN ANCILLARY ANALYSIS

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Introduction Two clinical trials tested a new management strategy for adolescents with Patellofemoral Pain (PFP) and Osgood-Schlatter Disease (OSD). The strategy consisted of activity modification (a 4-week break from sport followed by progressive return to sport), education, and exercises. This strategy appeared to improve self-reported symptoms and reduce vigorous physical activity, but it is unclear if this had detrimental effects on adolescents' sedentary behavior. The aim of this study was to investigate the changes in sedentary behavior during an activity modification management strategy for PFP and OSD.

Materials and Methods This ancillary analysis included data from two single arm trials of activity modification, education, and exercises of 177 adolescents' with PFP or OSD. ActiGraph GT3X+ measured physical activity and sedentary time before and during the trial (at four weeks follow-up)