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The effect of the FIFA 11+ warm-up program with or without Copenhagen adduction exercise on eccentric hip adduction strength

Submission date
30/12/2015

Recruitment status
No longer recruiting

Registration date
07/01/2016

Overall study status
Completed

Last Edited
10/01/2018

Condition category
Signs and Symptoms

[X] Prospectively registered
[_] Protocol
[_] Statistical analysis plan
[X] Results
[_] Individual participant data

Plain English summary of protocol

Background and study aims
Groin injuries are among the most common type of sports injuries involving high-impact actions like kicking, cutting, change of directions and rapid acceleration. In football, groin injuries account for 4-19% of the total injuries. Recent studies have shown that previous injuries, playing more often and reduced hip adductor (a group of muscles that make up the inner thigh) strength can increase a persons' chance of groin injuries in male football players. Studies looking at hockey and Australian football support the findings of reduced hip adductor strength as increasing risk of groin injury. Despite these findings, the FIFA 11+ (a warm-up program to prevent injuries in football players) does not include exercises designed to improve hip adductor strength. The overall aim of this project is to look at the effect incorporating Copenhagen Adduction (CA) exercises (exercises designed to increase hip adductor strength) into an 8 week war-up programme could help increase hip adductor strength and prevent groin injuries.

Who can participate?
Male football players aged between 15 and 19 who play for elite under 19's teams in Oslo (Norway).

What does the study involve?
Participants are randomly allocated to one of two groups. Participants in both groups take part in the FIFA 11+ training, which involves 15 exercises split into three parts. The firs part involves slow speed running exercises with stretching, the second part involves six exercises focusing on improving core and leg strength, balance and agility, and the third part involves moderate-high speed running exercises with planting/cutting movements (stopping and changing direction quickly). Participants in the first group also take part in CA exercises which involve floor-based leg-stretching exercises with a partner. At the start of the study and then at 8 weeks (when the final exercise has been finished), participants in both groups have the strength of their hip adductors and hamstrings measured.

What are the possible benefits and risks of participating?
There are no direct benefits or risks to participants taking part in the study.

Where is the study run from?
Oslo Sports Trauma Research Center (Norway)

When is the study starting and how long is it expected to run for?
January 2016 to March 2016

Who is funding the study?
Oslo Sports Trauma Research Center (Norway)

Who is the main contact?
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Contact information

Type(s)
Scientific

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Additional identifiers

Protocol serial number
N/A

Study information

Scientific Title
The effect of the FIFA 11+ warm-up program with or without Copenhagen adduction exercise on eccentric hip adduction strength: a randomised controlled trial

Acronym
EADSE11+

Study objectives
Eccentric hip adduction strength for players performing FIFA 11+ will increase 10% or more, in players randomised to replacing the Nordic Hamstring (NH) exercises with the CA exercise, compared to players performing the standard FIFA 11+ program.

Ethics approval required
Old ethics approval format

Ethics approval(s)
1. Regional Committees for Medical Research Ethics, 19/11/2015, ref: 2015/1921/REK south east
2. Norwegian Social Science and Data Service, 27/11/2015, ref: 45393/3/LT/LR.

Study design
Single-centre randomized single-blind controlled trial

Primary study design
Interventional

Study type(s)
Other

Health condition(s) or problem(s) studied
Eccentric hip adductor strength

Interventions
Two under 19's (U19) male football teams in the Oslo region are invited to take part in an 8-week study. Players will individually be randomized into the different training groups stratified according to team belonging.

FIFA 11+ group: The FIFA 11+ programme consists of three parts, with a total of 15 exercises, which should be performed in a specified sequence at the start of each training session. This consists of running exercises at a slow speed combined with active stretching and partner controlled contact, six exercises focusing on core and leg strength, balance and plyometrics /agility, each with three levels of increasing difficulty and then running exercise at moderate /high speed combined with planting/cutting movements. The participants will perform the warm-up program prior to training three times per week, supervised by a sports physiotherapist.

FIFA 11+ with CA group: The participants in the FIFA 11+ with CA group will be asked to carry out the FIFA 11+, but replacing the NH exercise with the CA exercise. The CA is a partner exercise where the player lying on their side with one forearm as support on the floor and the other arm placed along the body. The dominant leg is held in approximately the height of the hip of the partner, who holds the leg with one arm supporting the ankle and the other supporting the knee. The player then raises the body from the floor and the non-dominant leg is adducted so that the feet touch each other and the body is in a straight line. The body is then lowered halfway to the ground while the foot of the non-dominant leg is lowered so that it just touches the floor without using it for support. The players will perform CA on both legs. Participants will perform the FIFA 11+ as warm up three times a week, supervised by a sports physiotherapist.

At baseline and within 7 days after completing the last exercise (8 weeks), all participants undergo strength and performance testing, an eccentric hip adduction strength test, an eccentric hamstring strength test and a sprint test.

Intervention Type
Other

Primary outcome(s)
Eccentric hip adduction strength in dominant leg is measured in Nm/kg using at portable hand-held dynamometer at baseline and 8 weeks.

Key secondary outcome(s))
1. Eccentric hamstring strength is determined by measuring the peak force (N) and average peak force of the three maximal hamstring trials using a NordBord at baseline and 8 weeks
2. Sprinting ability is measured using a 20 m sprint tests will be performed on an 8-mm Mondotrack FTS surface by timing participants on distances 0-5m, 0-10m, 0-15m and 0-20m at baseline and 8 weeks
3. Eccentric hip adduction strength in dominant leg is measured in Nm/kg using at portable hand-held dynamometer at baseline and 8 weeks

Completion date
15/03/2016

Eligibility

Key inclusion criteria
Healthy male football players playing in the regional elite U19 (15-19 years) league in Oslo region.

Participant type(s)
Healthy volunteer

Healthy volunteers allowed
No

Age group
Mixed

Sex
Male

Key exclusion criteria
Players with any injury or illness which means that they can't part in the testing procedure.

Date of first enrolment
08/01/2016

Date of final enrolment
09/01/2016

Locations

Countries of recruitment

Norway

Study participating centre
Oslo Sports Trauma Research Center
Norwegian School of Sport Sciences
PB 4014 Ullevål Stadion
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Sponsor information

Organisation
Oslo Sports Trauma Research Center

ROR
https://ror.org/018ct3570

Funder(s)

Funder type
Research organisation

Funder Name
Oslo Sports Trauma Research Center

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	01/11/2017		Yes	No
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes