

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

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<b>Registration date</b> 07/01/2016	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
<b>Last Edited</b> 10/01/2018	<b>Condition category</b> Signs and Symptoms	<input type="checkbox"/> 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

EudraCT/CTIS number

IRAS number

ClinicalTrials.gov number

Secondary identifying numbers  
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

## **Secondary study design**

Randomised controlled trial

## **Study setting(s)**

Other

## **Study type(s)**

Other

## **Participant information sheet**

Not available in web format, please use the contact details below to request a patient information sheet.

## **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 measure**

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

### **Secondary outcome measures**

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

### **Overall study start date**

07/01/2016

### **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

### **Age group**

Mixed

**Sex**

Male

**Target number of participants**

The sample size calculation is based on a previous study examining strength effect on CA. With a power of 80% and a 10% increase in eccentric hip adduction strength ( $\Delta=0.28$ ,  $SD=0.316$ ) in the FIFA 11+ group with CA and no strength increase ( $\Delta=0$ ,  $SD=0.295$ ) in the FIFA 11+ group, we need 20 players in each group. As we may expect dropouts due to injuries, we plan to include 25 players in each group.

**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

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## **Sponsor information**

**Organisation**

Oslo Sports Trauma Research Center

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**Sponsor type**

Research organisation

**Website**

<http://www.klokeavskade.no/en/>

**ROR**

<https://ror.org/018ct3570>

## Funder(s)

**Funder type**

Research organisation

**Funder Name**

Oslo Sports Trauma Research Center

## Results and Publications

**Publication and dissemination plan**

We plan to publish the results in 2017.

**Intention to publish date**

30/06/2017

**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?
<a href="#">Results article</a>	results	01/11/2017		Yes	No