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A structured warm-up program to prevent overuse shoulder injuries among elite handball players

Submission date	Recruitment status	[X] Prospectively registered
07/03/2014	No longer recruiting	[_] Protocol
Registration date	**Overall study status**	[_] Statistical analysis plan
11/04/2014	Completed	[X] Results
Last Edited	**Condition category**	[_] Individual participant data
20/06/2016	Injury, Occupational Diseases, Poisoning	

Plain English summary of protocol

Background and study aims
Overuse shoulder injuries and shoulder pain in general are common in overhead throwing sports, such as badminton, baseball, volleyball and handball. This study will use handball as a model to test the effects of a structured exercise program on the prevention of overuse shoulder injuries among elite players, building on recent studies about risk factors.

Who can participate?
All 48 male and female handball teams in the top two divisions in Norway will be invited to participate, giving a total number of about 800 players.

What does the study involve?
The teams will be randomly allocated to either the prevention (24 teams, 400 players) or control group (24 teams, 400 players). Players will be tested and asked to complete questionnaires before the 2014-2015 season, which starts in September and ends in April. During the season, teams in the prevention group are asked to complete a prevention program as part of their warm up. The control group is asked to continue normal training activity. During the season all players, in both groups, will be followed to record the prevalence of overuse shoulder injuries.

What are the possible benefits and risks of participating?
The knowledge gained will be of use to researchers, doctors and coaching staff working with overhead throwing athletes. This program have no side effects and there is no potential risk involved in participating in the study.

Where is the study run from?
The study is run from the Oslo Sports Trauma Research Center, Norway

When is the study starting and how long is it expected to run for?
This study starts in August 2014 and runs for 1 year

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
A structured warm-up program to prevent overuse shoulder injuries among elite handball players: a cluster randomized controlled trial

Study objectives
A structured warm-up program targeting scapular control, glenohumeral external rotation strength, glenohumeral internal rotation motion and core stability reduces the prevalence of overuse shoulder injuries among elite handball players.

Ethics approval required
Old ethics approval format

Ethics approval(s)
1. Regional Committees for Medical Research Ethics, 23/05/2014, case number: 2014/653/REK sør-øst
2. Norwegian Social Science and Data Service, 24/03/2014, case number: 28187/3/LT

Study design
Multi-team cluster randomized controlled trial

Primary study design
Interventional

Study type(s)
Prevention

Health condition(s) or problem(s) studied
Overuse shoulder injuries

Interventions
1. The prevention program will be implemented as a standard part of the warm up for handball training sessions in the intervention group throughout the 2014-2015 season. The prevention program will consist of exercises aimed at increasing scapular control, glenohumeral external rotation strength, glenohumeral internal range of motion and core stability.

2. The teams in the control group will continue to warm up and train as usual.

Intervention Type
Other

Phase
Not Applicable

Primary outcome(s)
Overuse shoulder injuries will be recorded biweekly in both groups during the season using the Oslo Sports Trauma Research Center Overuse Injury Questionnaire. All players will electronically receive the questionnaire consisting of four questions that record the extent to which each player may have reduced or modified their training, suffered from reduced performance, or experienced pain due to shoulder problems during the last seven days. In addition the questionnaire measures exposure to handball, both training and match, during the last seven days.

Key secondary outcome(s))
1. Injuries leading to time-loss, both acute and overuse, will be recorded in both groups monthly using an electronic questionnaire, which will be sent to the team physiotherapists.
2. Compliance with the prevention program will be recorded in the prevention group at every training session by the team coaches.
3. Additional strength training including the shoulder girdle will be measured monthly in both groups using an electronic questionnaire answered by the team coaches.

Completion date
15/08/2015

Eligibility

Key inclusion criteria

Healthy male and female handball players with a contract with either a Postenliga team (24 teams) or 1.divison team (24 teams) in the 2014-2015 season.

Participant type(s)
Healthy volunteer

Healthy volunteers allowed
No

Age group
Adult

Sex
All

Key exclusion criteria
There are no exclusion criteria

Date of first enrolment
01/08/2014

Date of final enrolment
15/08/2015

Locations

Countries of recruitment
Norway

Study participating centre
Norwegian School of Sport Sciences
Oslo
Norway
0806

Sponsor information

Organisation
Oslo Sports Trauma Research Center (Norway)

ROR
https://ror.org/018ct3570

Funder(s)

Funder type
Research organisation

Funder Name
Oslo Sports Trauma Research Center (Norway)

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not provided at time of registration

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	01/07/2017		Yes	No