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Evaluation of a compressed program for shoulder external rotation strength in handball

Submission date	**Recruitment status**	[X] Prospectively registered
17/09/2019	No longer recruiting	[X] Protocol
Registration date	**Overall study status**	[_] Statistical analysis plan
18/09/2019	Completed	[X] Results
Last Edited	**Condition category**	[_] Individual participant data
13/08/2021	Other	

Plain English summary of protocol

Background and study aims
Many handball players have shoulder pain while playing handball. The throwing shoulder is vulnerable for injuries due to repetitive throwing and tackles. A recent study demonstrated that it is possible to reduce the problem by more than 25%. Despite this reduction in shoulder problems, less than one-third of the coaches and players would continue using the whole program the next season, because 'the program was too time-consuming'. Shoulder external rotation weakness is assumed to be a risk factor for shoulder injuries in handball. Therefore, the compressed program to increase external rotation strength was developed. The aim of this study is to examine the effect of the new, compressed shoulder external strength program in youth handball.

Who can participate?
Handball players aged 16 to 18 who play in clubs located in or close to Oslo

What does the study involve?
Six female and male youth 16-18 handball teams will be invited to participate in this study. The researchers will randomly allocate within each team to one exercise group and one control group. The exercise program will be implemented after regular handball training three times a week for eight weeks in the intervention group. The program consists of two shoulder external rotation strength exercises with variations and progressions, aimed to increase shoulder external rotation strength. One dedicated physiotherapist will deliver and supervise the program in the teams once or twice a week. The program will take about ten minutes to complete. Both groups will continue doing their regular training.

What are the possible benefits and risks of participating?
Increasing shoulder external rotation strength, which is a risk factor for shoulder injuries in handball, is a possible benefit in the intervention group. All the participants will be offered the training program after the intervention is finished. There are no known risks of participating.

Where is the study run from?
Oslo Sports Trauma Research Center / Norwegian School of Sport Science (Norway)

When is the study starting and how long is it expected to run for?
January 2019 to December 2020

Who is funding the study?
The Oslo Sports Trauma Research Center has been established at the Norwegian School of Sport Sciences through generous grants from the Royal Norwegian Ministry of Culture, the South-Eastern Norway Regional Health Authority, the International Olympic Committee, the Norwegian Olympic Committee & Confederation of Sport, and Norsk Tipping AS

Who is the main contact?
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Contact information

Type(s)
Scientific

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Additional identifiers

EudraCT/CTIS number
Nil known

IRAS number

ClinicalTrials.gov number
Nil known

Secondary identifying numbers
Nil known

Study information

Scientific Title
Evaluation of a compressed program for shoulder external rotation strength in handball. A randomized controlled study among adolescent handball players

Study objectives
The aim of this study is to examine the effect of a new, compressed shoulder ER strength program in handball.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Approved 17/09/2019, Norwegian regional committee for medical and health research ethics, South East region (REK sør-øst, Pb 1130 Blindern, 0318 Oslo, Norway; Email: rek-sorost@medisin.uio.no), ref: 2019/1301/REK sør-øst

Study design
Randomized controlled trial

Primary study design
Interventional

Secondary study design
Randomised controlled trial

Study setting(s)
Other

Study type(s)
Other

Participant information sheet
Only available in Norwegian. Please use the contact details to request a participant information sheet

Health condition(s) or problem(s) studied
Shoulder strength training in healthy adolescent handball players

Interventions
Six female and male youth 16-18 handball teams will be invited to participate in this study. The researchers will conduct single randomization within each team to one exercise group and one control group. The exercise program will be implemented after regular handball training three times a week for eight weeks in the intervention group. The program consists of two shoulder external rotation (ER) strength exercises with variations and progressions, aimed to increase shoulder ER strength. One dedicated physiotherapist will deliver and supervise the program in the teams once or twice a week. The program will take about ten minutes to complete. Both groups will continue doing their regular training.

Intervention Type
Other

Primary outcome measure
Shoulder external rotation strength is measured using a handheld dynamometer (MicroFET, Hoggan Health Industries, Salt Lake City, Utah, USA) at baseline and after 8 weeks of intervention

Secondary outcome measures
Shoulder internal rotation range of motion is measured using a digital goniometer (Easyangle, Meloq AB, Stockholm, Sweden) at baseline and after 8 weeks of intervention

Overall study start date
01/01/2019

Completion date
31/12/2019

Eligibility

Key inclusion criteria
1. Handball players
2. Aged 16 to 18 years
3. Play handball in clubs located in or close to Oslo

Participant type(s)
Healthy volunteer

Age group
Other

Sex
Both

Target number of participants
72

Total final enrolment
92

Key exclusion criteria
Teams who participated in a similar study last year

Date of first enrolment
23/09/2019

Date of final enrolment
03/10/2019

Locations

Countries of recruitment
Norway

Study participating centre

Oslo Sports Trauma Research Center/ Norwegian School of Sport Science
Sognsveien 220
Oslo
Norway
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Sponsor information

Organisation
Oslo Sports Trauma Research Center, Norwegian School of Sports Sciences

Sponsor details
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Sponsor type
University/education

Website
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ROR
https://ror.org/018ct3570

Funder(s)

Funder type
Government

Funder Name
The Oslo Sports Trauma Research Center has been established at the Norwegian School of Sport Sciences through generous grants from the Royal Norwegian Ministry of Culture, the South-Eastern Norway Regional Health Authority, the International Olympic Committee, the Norwegian Olympic Committee & Confederation of Sport, and Norsk Tipping AS

Results and Publications

Publication and dissemination plan

The researchers plan to publish the results in 2020.

Intention to publish date
30/04/2021

Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study are/will be available upon request from Hilde Fredriksen (hilde.fredriksen@nih.no). De-identified raw data will be available from the date the article is published. The data will be available for meta-analyses by researchers doing the same type of studies, looking at shoulder strength in athletes.

IPD sharing plan summary
Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Protocol file		18/09/2019	18/09/2019	No	No
Protocol file		29/06/2020	29/06/2020	No	No
Results article		01/04/2021	13/08/2021	Yes	No