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

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| **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?
Mrs Hilde Fredriksen
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# Contact information

### Type(s)
Scientific

### Contact name
Mrs Hilde Fredriksen

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# Additional identifiers

### Clinical Trials Information System (CTIS)
Nil known

### ClinicalTrials.gov (NCT)
Nil known

### Protocol serial number
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

### Study type(s)
Other

### 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(s)
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

### Key secondary outcome(s))
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

### 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

### Healthy volunteers allowed
No

### Age group
Other

### Sex
All

### 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
0806

## Sponsor information

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

**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

**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? |
|---|---|---|---|---|---|
| Results article | | 01/04/2021 | 13/08/2021 | Yes | No |
| Protocol file | | 18/09/2019 | 18/09/2019 | No | No |
| Protocol file | | 29/06/2020 | 29/06/2020 | No | No |