

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

10 Jun 2026

### Effect of 12 weeks of stretch and strength exercise on shoulder function, sport performance and level of daily living activities in basketball wheelchair players with shoulder pain

#### Protocol summary

##### Study aim

Effect of 12 weeks of strength and stretching exercises on shoulder function, athletic performance and daily activities of wheelchair basketball players with shoulder pain

##### Design

This is a 12 week, prospective, parallel group, randomized controlled trial with 1: 1 allocation ratio in control and exercise groups..

##### Settings and conduct

The present study will be carried out at the University of Guilan. Because of nature of the study, the participants are not blind to the division into groups, but statisticians and evaluators split participants into groups.

##### Participants/Inclusion and exclusion criteria

Inclusion Criteria: Use manual wheelchair as a means of displacement (at least 50% of time), unilateral or bilateral shoulder pain that affected at least one function (eg, physical activity, and wheelchair use), Confirmation of one of the Neer and Hawkins-Kennedy tests, or pain with arm elevation. Exclusion criteria; Hospitalization due to acute injury, fracture, or shoulder surgery during the past year, injection of cortisone into shoulder over the past 4 months and participation in physiotherapy or shoulder exercise during the past year.

##### Intervention groups

The exercise intervention was based on interventions for shoulder pain in previous studies that included stretching (4 exercises) and strengthening (4 exercises) exercise. Strengthening exercise targeted serratus anterior muscle, scapular retractor and deurator muscles, and glenohumeral external rotator muscles and the stretching exercise aimed to increase flexibility of upper trapezius muscle, pectoralis major and minor muscles, and posterior glenohumeral capsule and underlying soft tissues.

##### Main outcome variables

Shoulder pain intensity, activities of daily living and sport skill and performance were assessed using the wheelchair user's shoulder pain index (WUSPI), Barthel Index and wheelchairs basketball field tests, respectively.

#### General information

##### Reason for update

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT20170114031942N9**

Registration date: **2018-08-15, 1397/05/24**

Registration timing: **prospective**

Last update: **2018-08-15, 1397/05/24**

Update count: **0**

##### Registration date

2018-08-15, 1397/05/24

##### Registrant information

##### Name

Aynollah Naderi

##### Name of organization / entity

Shahrood University of Technology

##### Country

Iran (Islamic Republic of)

##### Phone

+98 917 721 7462

##### Email address

ay.naderi@shahroodut.ac.ir

##### Recruitment status

**Recruitment complete**

##### Funding source

##### Expected recruitment start date

2018-08-23, 1397/06/01

##### Expected recruitment end date

2018-09-23, 1397/07/01

**Actual recruitment start date**  
empty

**Actual recruitment end date**  
empty

**Trial completion date**  
empty

**Scientific title**  
Effect of 12 weeks of stretch and strength exercise on shoulder function, sport performance and level of daily living activities in basketball wheelchair players with shoulder pain

**Public title**  
Effect of stretch and strength exercise on performance of basketball wheelchair players with shoulder pain

**Purpose**  
Treatment

**Inclusion/Exclusion criteria**  
**Inclusion criteria:**  
The presence of one-sided or bilateral shoulder pain that affects at least one function (for example, sport activity, wheelchair use). Confirmation of one of the Neer and Hawkins-Kennedy tests, or pain with the arm elevation  
**Exclusion criteria:**  
Hospitalization due to acute injury, fracture, or shoulder surgery during the past year. Injection of cortisone into shoulder over the past 4 months. Participation in the physiotherapy duration or shoulder exercise therapy during the past year.

**Age**  
From **25 years** old to **40 years** old

**Gender**  
Male

**Phase**  
3

**Groups that have been masked**  
*No information*

**Sample size**  
Target sample size: **30**

**Randomization (investigator's opinion)**  
Randomized

**Randomization description**  
Blocks randomization with blocks 2 and 4 is used to allocate the participants in the research groups. Participants allocation is carried out by one of the research team members who are not associated with the 1: 1 allocation ratio within the exercise and control groups. Allocation sequences are hidden by the envelopes encoded in the order numbered, and the letter envelopes are opened only after all the initial and initial evaluations of the participants have been made. A computerized list of random numbers for random allocation of subjects in blocks 2 and 4 is created by statistical consultant using SPSS software. Because of the nature of the study, evaluators and participants are not blinded from the groups allocation, but statistician is blinded.

**Blinding (investigator's opinion)**  
Not blinded

**Blinding description**

**Placebo**  
Not used

**Assignment**  
Parallel

**Other design features**

## Secondary Ids

empty

## Ethics committees

### 1

#### Ethics committee

##### Name of ethics committee

University of Guilan

##### Street address

Qazvin Road, Persian Gulf Highway, Rasht

##### City

Rasht

##### Province

Guilan

##### Postal code

4199613776

#### Approval date

2018-07-09, 1397/04/18

#### Ethics committee reference number

IR.GUMS.REC.1397.184

## Health conditions studied

### 1

#### Description of health condition studied

Shoulder pain

#### ICD-10 code

#### ICD-10 code description

## Primary outcomes

### 1

#### Description

Shoulder pain intensity

#### Timepoint

Measure shoulder pain intensity at the beginning of the study (before the intervention) and 12 weeks after the intervention .

#### Method of measurement

wheelchair user's shoulder pain index

### 2

#### Description

Activities of daily living

#### Timepoint

Measure daily activities at the beginning of the study (before the intervention) and 12 weeks after the intervention .

#### Method of measurement

Barthel Index

### 3

#### **Description**

Sport skill and performance

#### **Timepoint**

Measure sport skill and performance at the beginning of the study (before the intervention) and 12 weeks after the intervention .

#### **Method of measurement**

wheelchairs basketball field tests

### **Secondary outcomes**

empty

### **Intervention groups**

#### 1

#### **Description**

Intervention group:. The exercise intervention was based on interventions for shoulder pain in previous studies that included stretching (4 exercises) and strengthening (4 exercises) exercise. Strengthening exercise targeted serratus anterior muscle, scapular retractor and depurator muscles, and glenohumeral external rotator muscles and the stretching exercise aimed to increase flexibility of upper trapezius muscle, pectoralis major and minor muscles, and posterior glenohumeral capsule and underlying soft tissues.

#### **Category**

Rehabilitation

#### 2

#### **Description**

Control group: Continue daily activities.

#### **Category**

N/A

### **Recruitment centers**

#### 1

#### **Recruitment center**

##### **Name of recruitment center**

University of Guilan

##### **Full name of responsible person**

Danyal Moslehpoor

##### **Street address**

Qazvin roads, Persian Gulf highways, Rasht, Guilan province

##### **City**

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##### **Province**

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### **Sponsors / Funding sources**

#### 1

#### **Sponsor**

##### **Name of organization / entity**

University of Guilan

##### **Full name of responsible person**

Dayal Moslehpoor

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#### **Grant name**

#### **Grant code / Reference number**

#### **Is the source of funding the same sponsor organization/entity?**

Yes

#### **Title of funding source**

University of Guilan

#### **Proportion provided by this source**

100

#### **Public or private sector**

Private

#### **Domestic or foreign origin**

Domestic

#### **Category of foreign source of funding**

empty

#### **Country of origin**

#### **Type of organization providing the funding**

Academic

### **Person responsible for general inquiries**

#### **Contact**

##### **Name of organization / entity**

University of Guilan

##### **Full name of responsible person**

Danyal Moslehpoor

##### **Position**

M.A student

##### **Latest degree**

Bachelor

##### **Other areas of specialty/work**

Sport science

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Gilan province, Rasht, Persian Gulf highways, Qazvin Roads

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## Person responsible for scientific inquiries

**Contact**

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**Position**

Assistant Professor

**Latest degree**

Ph.D.

**Other areas of specialty/work**

Physical Education and Sports Science

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## Person responsible for updating data

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Aynollah Naderi

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**Latest degree**

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**Other areas of specialty/work**

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## Sharing plan

**Deidentified Individual Participant Data Set (IPD)**

No - There is not a plan to make this available

**Justification/reason for indecision/not sharing IPD**

There is no more information.

**Study Protocol**

No - There is not a plan to make this available

**Statistical Analysis Plan**

No - There is not a plan to make this available

**Informed Consent Form**

No - There is not a plan to make this available

**Clinical Study Report**

No - There is not a plan to make this available

**Analytic Code**

No - There is not a plan to make this available

**Data Dictionary**

No - There is not a plan to make this available