Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

Effect of scapular stabilization exercises with strengthening of infraspinatus muscle isolation on electromyography, pain and function of badminton players with impingment syndrome subsequent upper extremity fatigue

Protocol summary

Study aim
Evaluation of the effect of shoulder stabilization exercises on electromyography, pain and performance of badminton players with impingement syndrome following upper limb fatigue

Design
The statistical population of the present study consists of female overhead athletes aged 18 to 22 years with scapular dyskinesia and impingement syndrome, from which 48 people were purposefully selected based on the inclusion criteria and randomly divided into two intervention groups and a control group. (16 people in each group).

Settings and conduct
The samples are then examined by a sports medicine specialist and clinical tests are taken from them. Then, the pre-test includes scheduling the muscles of the upper and lower trapezius and the ceratus enteriver, infraspinatus, and supraspinatus during the over-elution task.Then, 6 weeks of scapular stabilization exercises and stabilization exercises begin with strengthening the infraspinatus muscle isolate. 48 hours after the end of the last session of the training protocol, like the pre-test, the post-test is taken.

Participants/Inclusion and exclusion criteria
Inclusion criteria: Age 18 to 22 years, overhead athletes with scapular dyskinesia and impingement syndrome, positive Hawkins and Near test Exclusion criteria: history of shoulder surgery Neuromuscular dysfunction Glenohumeral and acromioclavicular joint dislocations Pathological symptoms associated with change in the appearance of the upper limb, shoulder injuries in the last 6 months

Intervention groups
1: Scapula stabilization exercises without strengthening the infraspinatus muscle isolate 2: Scapular stabilization exercises with strengthening the infraspinatus muscle isolate 3: control group

Main outcome variables
Independent variable: Scapular stabilization exercises Dependent variables: electromyography of selected muscles, pain and performance of athletes

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20200913048703N1**
Registration date: **2020-12-19, 1399/09/29**
Registration timing: **retrospective**

Last update: **2020-12-19, 1399/09/29**
Update count: **0**

Registration date
2020-12-19, 1399/09/29

Registrant information

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Zahra Sadeghi amroabadi
Name of organization / entity
Kharazmi university
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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2019-05-22, 1398/03/01
Expected recruitment end date
2019-08-23, 1398/06/01
Actual recruitment start date
2019-05-22, 1398/03/01
Actual recruitment end date
2019-08-23, 1398/06/01
Trial completion date
2019-08-23, 1398/06/01

Scientific title
Effect of scapular stabilization exercises with strengthening of infraspinatus muscle isolation on electromyography, pain and function of badminton players with impingment syndrome subsequent upper extremity fatigue

Public title
Effect of scapular stabilization exercises with strengthening of infraspinatus muscle isolation on electromyography, pain and function of badminton players with impingment syndrome subsequent upper extremity fatigue
Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria:
Overhead athlete With scapular dyskinesia With impingement syndrome Painful arch when raising the hand Hawkins test positive Neer test Positive
Exclusion criteria:
History of shoulder surgery History of systemic disorders Neuromuscular dysfunction Glenohumeral and acromioclavicular joint dislocations Pathological symptoms associated with a history of fractures, dislocations, surgery, changes in the appearance of the upper limb Shoulder and shoulder injuries in the last 6 months
Age
From **18 years** old to **22 years** old
Gender
Female

Phase
N/A
Groups that have been masked

- Investigator
- Outcome assessor
- Data analyser

Sample size
Target sample size: **48**
Actual sample size reached: **48**
Randomization (investigator's opinion)
Randomized
Randomization description
For the randomization method, a list of numbers from each will be randomly assigned to a type of training method, then grouped according to the instructions will be assigned to each participant. Randomization will be done one by one by random block method
Blinding (investigator's opinion)
Single blinded
Blinding description
They evaluate data related to variables related to outcome variables and analyze laboratory data blindly and are unaware of the assignment of study groups.
Placebo
Not used
Assignment
Parallel
Other design features
Present study consists of female overhead athletes aged 18 to 22 years with scapular dyskinesia and impingement syndrome, from which 48 people were purposefully selected based on the inclusion criteria and randomly divided into two intervention groups and a control group. (16 people in each group).

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Kharazmi University Research Ethics Committee
Street address
No. 18, 1 St Alley, Sarafraz St., Motahhari St.
City
Tehran
Province
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Postal code
1587614411
Approval date
2019-12-30, 1398/10/09
Ethics committee reference number
IR.KHU.REC.1398.036

Health conditions studied

1

Description of health condition studied
Evaluation of the effect of shoulder stabilization exercises on electromyography, pain and performance of badminton players with impingement syndrome following upper limb fatigue
ICD-10 code
ICD-10 code description

Primary outcomes

1

Description
Electromyography of selected muscles
Timepoint
Pre-test and post-test
Method of measurement

Noraxon EMG device

2

Description
pain
Timepoint
Pre-test and post-test
Method of measurement
VAS

3

Description
Function
Timepoint
Pre-test and post-test
Method of measurement
Upper limb function evaluation test in closed chain

Secondary outcomes

empty

Intervention groups

1

Description
Samples are examined and clinically tested by a sports medicine specialist. Also, the scapular dyskinesia test is taken from the subjects and if the tests are positive and approved by the doctor, the samples will be approved. Then, the pre-test includes scheduling of upper and lower trapezius muscles and Ceratus enteriver, infraspinatus and supraspinatus during the over-arm elution task. Participants then perform a pre-test, immediately follow the fatigue protocol, and re-perform the pre-test: then 6 weeks of scapular stabilization and stabilization exercises begin with strengthening the infraspinatus muscle isolate. 48 hours after the end of the last session of the training protocol, participants are asked to come to the laboratory for the post-test, and similar to the pre-test, the post-test is taken.
Category
Rehabilitation

Recruitment centers

1

Recruitment center
Name of recruitment center
Research Institute of Physical Education and Sports Sciences
Full name of responsible person
Zahra Sadeghi Amroubadi
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
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Shahid Keshvari complex, Faculty of Physical Education and Sports Sciencese, End of South Razan street, End of Mirdamad, Tehran
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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
Kharazmi University
Proportion provided by this source
100
Public or private sector
Public
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
Kharazmi University
Full name of responsible person
Zahra Sadeghi Amroubadi
Position
MSc
Latest degree
Master
Other areas of specialty/work

Others

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Sharing plan

Deidentified Individual Participant Data Set (IPD)
Yes - There is a plan to make this available

Study Protocol
Yes - There is a plan to make this available

Statistical Analysis Plan
Yes - There is a plan to make this available

Informed Consent Form
Yes - There is a plan to make this available

Clinical Study Report
Yes - There is a plan to make this available

Analytic Code
Yes - There is a plan to make this available

Data Dictionary
Yes - There is a plan to make this available

Title and more details about the data/document
Only part of the data such as dependent variables in the form of a scientific article can be shared as the average of all samples

When the data will become available and for how long
Six months after the results were published

To whom data/document is available
Personal information is confidential and the overall results are available to everyone in the form of an article.

Under which criteria data/document could be used
The information is not shared with anyone. The overall results are made available to everyone in the form of an article

From where data/document is obtainable
Zahra Sadeghi

What processes are involved for a request to access data/document
imail

Comments