

Clinical Trial Protocol

Iranian Registry of Clinical Trials

16 Sep 2026

Study the efficacy of plyometric exercise on static and dynamic balance indices in athletic and non-athletic subjects

Protocol summary

Summary

The objective of this randomized trial is to investigate the effect of plyometric exercise in static and dynamic balance indices in athletic and non-athletic subjects. In this study 100 subjects (50 athlete and 50 non-athlete) who meet the inclusion/exclusion criteria will be recruited and randomly assigned into intervention or control group. The subjects in the intervention group will receive plyometric exercise. The subjects in control group will receive no intervention. Intervention lasts for 6 weeks. Static and dynamic balance indices with eyes opened and closed, falling risk and limited stability of all participants will be measured before intervention, immediately after and 1 month after the intervention, and will be compared between groups.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT201207184203N3**

Registration date: **2012-08-16, 1391/05/26**

Registration timing: **registered_while_recruiting**

Last update:

Update count: **0**

Registration date

2012-08-16, 1391/05/26

Registrant information

Name

Atefeh Aminian Far

Name of organization / entity

Semnan University of Medical Sciences

Country

Iran (Islamic Republic of)

Phone

+98 23 1335 4180

Email address

aminianfar@razi.tums.ac.ir

Recruitment status

Recruitment complete

Funding source

Deputy of Research, Semnan University of Medical Sciences (Governmental source)

Expected recruitment start date

2012-06-21, 1391/04/01

Expected recruitment end date

2012-09-22, 1391/07/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Study the efficacy of plyometric exercise on static and dynamic balance indices in athletic and non-athletic subjects

Public title

Exersice and Balance

Purpose

Other

Inclusion/Exclusion criteria

Inclusion criteria: Healthy female and male students with professional sport activity or non-athletic subjects.

Exclusion criteria: 1) having musculo-skeletal, neuro-muscular, cardio-vascular, respiratory diseases, 2) Previous history of lower limb fracture during last year, 3) Previous history of sever trunk or lower limbs truma during last 3 months, 4) Aquaired flat foot, 5) having musculo-skeletal disorders/abnormality.

Age

From **18 years** old to **25 years** old

Gender

Both

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **100**

Randomization (investigator's opinion)
Randomized

Randomization description

Blinding (investigator's opinion)
Single blinded

Blinding description

Placebo
Not used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Deputy of Research, Semnan University of Medical Sciences

Street address

Bassij Blvd, Semnan University of Medical Sciences, Deputy of Research, Semnan, Iran.

City

Semnan

Postal code

3519899951

Approval date

2012-06-12, 1391/03/23

Ethics committee reference number

186171/91

Health conditions studied

1

Description of health condition studied

Athletes' Balance

ICD-10 code

Z50.7

ICD-10 code description

Occupational therapy and vocational rehabilitation, not elsewhere classified

Primary outcomes

1

Description

Overall balance, with open eyes

Timepoint

Before Intervention, 6 weeks following the intervention, 1

month following end of intervention.

Method of measurement

Biodex Balance measurement System

2

Description

Anterior-Posterior balance, with open eyes

Timepoint

Before Intervention, 6 weeks following the intervention, 1 month following end of intervention.

Method of measurement

Biodex Balance measurement System

3

Description

Medial-lateral balance, with open eyes

Timepoint

Before Intervention, 6 weeks following the intervention, 1 month following end of intervention.

Method of measurement

Biodex Balance measurement System

4

Description

Overall balance, with closed eyes

Timepoint

Before Intervention, 6 weeks following the intervention, 1 month following end of intervention.

Method of measurement

Biodex Balance measurement System

5

Description

Anterior-Posterior balance, with closed eyes

Timepoint

Before Intervention, 6 weeks following the intervention, 1 month following end of intervention

Method of measurement

Biodex Balance measurement System

6

Description

Medial-Lateral balance, with closed eyes

Timepoint

Before Intervention, 6 weeks following the intervention, 1 month following end of intervention

Method of measurement

Biodex Balance measurement System

7

Description

Falling risk

Timepoint

Before Intervention, 6 weeks following the intervention, 1 month following end of intervention.

Method of measurement

Biodex Balance measurement System

8

Description

Limited stability

Timepoint

Before Intervention, 6 weeks following the intervention, 1 month following end of intervention.

Method of measurement

Biodex Balance measurement System

Secondary outcomes

empty

Intervention groups

1

Description

Intervention Group: Plyometric Exercises as follows:

Week 1: Side to side ankle hops (2 sets × 15 Reps), Standing jump and reach (2 sets × 15 Reps), Front cone hops (5 sets × 6 Reps). Week 2: Side to side ankle hops (2 sets × 15 Reps), Standing long jump (5 sets × 6 Reps), Lateral jump over barrier (2 sets × 15 Reps), Double leg hops (5 sets × 6 Reps). Week 3: Side to side ankle hops (2 sets × 12 Reps), Standing long jump (4 sets × 6 Reps), Lateral jump over barrier (2 sets × 12 Reps), Lateral cone hops (2 sets × 12 Reps). Week 4: Diagonal cone hops (4 sets × 8 Reps), Standing long jump with lateral sprint (4 sets × 8 Reps), Lateral cone hops (2 sets × 12 Reps), Single leg bounding (4 sets × 7 Reps), Lateral jump single leg (4 sets × 6 Reps). Week 5: Diagonal cone hops (2 sets × 7 Reps), Standing long jump with lateral sprint (4 sets × 7 Reps), Lateral cone hops (2 sets × 12 Reps), Cone hops with 180 degree turn (4 sets × 7 Reps), Single leg bounding (4 sets × 7 Reps), Lateral jump single leg (2 sets × 7 Reps). Week 6: Diagonal cone hops (2 sets × 12 Reps), Hexagonal drill (2 sets × 12 Reps), Cone hops with change of direction sprint (4 sets × 6 Reps), Double leg hops (3 sets × 8 Reps), Lateral jump single leg (4 sets × 6 Reps). All exercises will be perform twice per week for 6 weeks.

Category

Treatment - Other

2

Description

Control group: no exercise

Category

Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Sport centers under supervision of Semnan Universities

Full name of responsible person

Dr. Atefeh Aminian Far

Street address

Kilometer 5 Damghan road, Semnan University of Medical Sciences

City

Semnan

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Deputy of Research, Semnan University of Medical Sciences

Full name of responsible person

Dr. Raheb Ghrbani

Street address

Bassij Blvd, Semnan University of Medical Sciences, Deputy of Research, Semnan, Iran.

City

Semnan

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Deputy of Research, Semnan University of Medical Sciences

Proportion provided by this source

100

Public or private sector

empty

Domestic or foreign origin

empty

Category of foreign source of funding

empty

Country of origin

Type of organization providing the funding

empty

Person responsible for general inquiries

Contact

Name of organization / entity

Semnan University of Medical Sciences

Full name of responsible person

Dr. Atefeh Aminian Far

Position

Ph.D of Physiotherapy/ Assistant Professor

Other areas of specialty/work

Street address

Kilometer 5 Damghan road, Semnan University of Medical Sciences

City

Semnan

Postal code

1439957181

Phone

+98 23 1335 4182

Fax

Email

aminfar@sem-ums.ac.iraminfar83@yahoo.com

Web page address

Person responsible for scientific inquiries

Contact

Name of organization / entity

Semnan University of Medical Sciences

Full name of responsible person

Dr. Atefeh Aminian Far

Position

Ph.D of Physiotherapy/ Assistant Professor

Other areas of specialty/work

Street address

Kilometer 5 Damghan road, Semnan University of Medical Sciences

City

Semnan

Postal code

1439957181

Phone

+98 23 1335 4182

Fax

Email

aminfar@sem-ums.ac.iraminfar83@yahoo.com

Web page address

Person responsible for updating data

Contact

Name of organization / entity

Semnan University of Medical Sciences

Full name of responsible person

Dr. Atefeh Aminian Far

Position

Ph.D of Physiotherapy/ Assistant Professor

Other areas of specialty/work

Street address

Kilometer 5 Damghan road, Semnan University of Medical Sciences

City

Semnan

Postal code

1439957181

Phone

+98 23 1335 4182

Fax

Email

aminfar@sem-ums.ac.iraminfar83@yahoo.com

Web page address

Sharing plan

Deidentified Individual Participant Data Set (IPD)

empty

Study Protocol

empty

Statistical Analysis Plan

empty

Informed Consent Form

empty

Clinical Study Report

empty

Analytic Code

empty

Data Dictionary

empty