

Clinical Trial Protocol

Iranian Registry of Clinical Trials

08 Jul 2026

The comparison between effect of adding external and internal focus to plyometric training on agility, lower extremity landing mechanic, performance, balance, strength in subjects with neuromuscular leg dominance deficit.

Protocol summary

Study aim

The goal of this research, The comparison between effect of adding external and internal focus to plyometric training on agility, lower extremity landing mechanic, performance, balance, strength in subjects with neuromuscular leg dominance deficit.

Design

this research, because of two intervention group and one control group is quasi- experimental and clinical trial and research design is pre and post test, a blinded study and randomize control trial. 54 participants will be recruited and loss of participants will be 20%.

Settings and conduct

In this research, participants are selected by tuck jump assessment and we will do pre test and execute the training phase. Finally, post test phase will be performed. It is noteworthy that training and test phases will be implemented at Omid gym in Takab city.

Participants/Inclusion and exclusion criteria

. Men and Women in 12 to 18 years old range; participants with normal BMI; Participants recruited for this thesis must haven't any previous injury, surgery in lower extremities, and cardiovascular disease.

Intervention groups

In this thesis, there are two intervention group. first experiment group will do plyometric training with external focus and second experiment group will do plyometric training with internal focus.

Main outcome variables

performance, Balance, Strength, Agility ,and Lower extremity Landing mechanic

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20220723055529N1**

Registration date: **2023-04-12, 1402/01/23**

Registration timing: **prospective**

Last update: **2023-04-12, 1402/01/23**

Update count: **0**

Registration date

2023-04-12, 1402/01/23

Registrant information

Name

Jafar Hamdidourbash

Name of organization / entity

The university of Kharazmi of karaj

Country

Iran (Islamic Republic of)

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Email address

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-04-29, 1402/02/09

Expected recruitment end date

2023-06-30, 1402/04/09

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The comparison between effect of adding external and internal focus to plyometric training on agility, lower extremity landing mechanic, performance, balance, strength in subjects with neuromuscular leg dominance deficit.

Public title

The comparison between effect of adding external and internal focus to plyometric training on agility, lower extremity landing mechanic, performance, balance, strength in subjects with neuromuscular leg dominance deficit.

Purpose

Prevention

Inclusion/Exclusion criteria

Inclusion criteria:

Male and female in 12 to 18 years old. participants with normal BMI

Exclusion criteria:

Individuals with cardiovascular disease history.
individuals with knee surgery history. participate in similar training about this research.

Age

From **12 years** old to **18 years** old

Gender

Both

Phase

N/A

Groups that have been masked

- Outcome assessor
- Data analyser

Sample size

Target sample size: **54**

Randomization (investigator's opinion)

Randomized

Randomization description

In this study, researcher initially select 54 sample sizes and then, randomly divided them into 3 groups include: control group (n=18), first experimental group (n=18) ,and second experimental group (n=18). for randomization assignment coding boxes with random order will be used that their size and forms are similar. thus. they consist of numbers from 1 to 54 . this process is so that number 1 to 18 will be assigned to first experimental group, number 19 to 36 will be assigned to second experimental group ,and number 37 to 54 will be assigned to control group.

Blinding (investigator's opinion)

Single blinded

Blinding description

In this research, participants will be divided into two experimental groups and a control group. At first, They will be informed about research process generally But, They will not informed about research details such as; objectives. In exert phases, the first and second intervention group will be separated then others. Data analysis will be implemented by statical data analysis specialist so that he/she will be received statistical data.

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Research Ethics Committees of Sport Sciences
Research Institute (SSRI)

Street address

Motahari St, Mirdamad St, Fifth Alley.

City

Tehran

Province

Tehran

Postal code

1587958711

Approval date

2022-06-17, 1401/03/27

Ethics committee reference number

IR.SSRC.REC.1401.030

Health conditions studied

1

Description of health condition studied

Leg Dominance Neuromuscular Deficit

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

agility

Timepoint

pre and post test

Method of measurement

T agility test

2

Description

Lower Extremity landing mechanic

Timepoint

pre and post test

Method of measurement

Kinovea Software

3

Description

Strength

Timepoint

pre and post test

Method of measurement

Dynamometer

4

Description

Balance

Timepoint

pre and post test

Method of measurement

Y Balance test

5

Description

performance

Timepoint

pre and post test

Method of measurement

Single Leg hop and countermovement jump

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: the first intervention group: in this group, participants will execute plyometric training with external focus for 8 weeks (30 minutes). Training phases will be started easy training levels (such as ;bilateral squat jump in place, forward) and will be advanced step by step (such as; unilateral squat jump, unilateral countermovement jump and execution by rope and medicine ball). participants will be exerted squat jump and trainer will be asked them that knees and feet are parallel to embedded cones during landing and knees are bend to cones as high as.

Category

Prevention

2

Description

Intervention group: The Second intervention group: in this group, participants will execute plyometric training with internal focus for 8 weeks (30 minutes). Training phases will be started easy training levels (such as ;bilateral squat jump in place, forward) and will be advanced step by step (such as; unilateral squat jump, unilateral countermovement jump and execution by rope and medicine ball). An example for internal focus with squat jump; An example for internal focus with plyometric; participants will be exerted squat jump and trainer will be asked them that knees and feet are parallel, knees aren't valgus position in landing.

Category

Prevention

3

Description

Control group: No One of intervention

Category

Prevention

Recruitment centers

1

Recruitment center

Name of recruitment center

Omid gym

Full name of responsible person

Jafar Hamdi Dourbash

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Bahri Alley, Enghelab Ave.

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5991313516

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j.hamdi@khu.ac.ir

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Kharazmi University

Full name of responsible person

Amir Letafat Kar

Street address

Mirdamad St, South Razan St, Shahid Keshvari Complex, Sport Science Faculty.

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Karaj

Province

Alborz

Postal code

439815875

Phone

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Email

letafatkaramir@yahoo.com

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

Jafar Hamdi Dourbash

Position

Master of Student

Latest degree

Master

Other areas of specialty/work

Sport Medicine

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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 data as a mean is shard as a paper

When the data will become available and for how long

September 2023

To whom data/document is available

the informatin is confidential and available for all as a papar

Under which criteria data/document could be used

the informatin is confidential and available for all as a papar

From where data/document is obtainable

Jafar Hamdi Dourbash j.hamdi65@yahoo.com

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

2 months later of publish, data will be sent by email

Comments