Clinical Trial Protocol
Iranian Registry of Clinical Trials

28 Oct 2026

The effect of different dimensions of cognition on the kinematics parameters of single leg hop test in athletes with anterior cruciate ligament reconstruction

Protocol summary

Study aim

The purpose of this study was to investigate the effects of cognitive tasks with different cognitive domains, including executive function, visuospatial processing, and working memory, on lower-extremity kinematic parameters during single-leg hoping in athletes with ACLR

Design

50 samples were placed in parallel groups without cognitive tasks and with cognitive tasks (auditory Stroop task, visual-spatial task (Dots) and backward counting). Randomization and blinding were not performed in this study.

Settings and conduct

Rehabilitation Research Center, School of Rehabilitation Sciences, Ahvaz jundishapur University of Medical Sciences,

Participants/Inclusion and exclusion criteria

Inclusion criteria: age 18–45 years; unilateral ACLR performed at least 6 months prior to testing; Tegner Activity Scale score ≥ 6; ability to perform jumping and rotational activities without pain; and return to pre-injury level of sports participation. Exclusion criteria included: self-reported knee instability; osteochondral lesions; neuromuscular disorders affecting the lower extremities or spine; rupture of other knee ligaments; meniscal tears greater than grade I ; severe cognitive impairments; uncorrected visual or auditory deficits; use of medications affecting cognition, or neuromuscular functions; diabetes mellitus; or dermatological conditions precluding marker placement .

Intervention groups

Athletes with ACL performed the single-leg hoping test under no cognitive task conditions, along with an auditory Stroop task, a visuospatial task (Dots), and a backward counting task.

Main outcome variables

Hip, knee, and ankle joint angles in the sagittal, frontal, and transverse planes at initial contact during a single-leg hop

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20260727070388N1**
Registration date: **2026-08-03, 1405/05/12**
Registration timing: **retrospective**

Last update: **2026-08-03, 1405/05/12**
Update count: **0**

Registration date

2026-08-03, 1405/05/12

Registrant information

Name
Nahid Pirayeh
Name of organization / entity
Country
Iran (Islamic Republic of)
Phone
+98 61 3554 3611
Email address
pirayeh-n@ajums.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-04-07, 1402/01/18

Expected recruitment end date

2025-09-21, 1404/06/30

Actual recruitment start date

2023-04-07, 1402/01/18

Actual recruitment end date
2025-09-21, 1404/06/30
Trial completion date
empty

Scientific title
The effect of different dimensions of cognition on the kinematics parameters of single leg hop test in athletes with anterior cruciate ligament reconstruction

Public title
The effect of different dimensions of cognition on the kinematics parameters of single leg hop test in athletes with anterior cruciate ligament reconstruction
Purpose
Health service research
Inclusion/Exclusion criteria
Inclusion criteria:
Age 18–45 years full active knee range of motion Tegner Activity Scale score ≥ 6 unilateral ACLR performed at least 6 months prior to testing ability to perform jumping and rotational activities without pain completion of a standard postoperative rehabilitation program return to pre-injury level of sports participation
Exclusion criteria:
self-reported knee instability osteochondral lesions neuromuscular disorders affecting the lower extremities or spine rupture of other knee ligaments; meniscal tears greater than grade I severe cognitive impairments uncorrected visual or auditory deficits use of medications affecting cognition, or neuromuscular functions history of lower-extremity or spinal surgery other than ACLR diabetes mellitus
Age
From **18 years** old to **45 years** old
Gender
Both

Phase
N/A
Groups that have been masked
No information
Sample size
Target sample size: **50**
Actual sample size reached: **50**
Randomization (investigator's opinion)
N/A
Randomization description
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
Ethics committee of Shiraz University of Medical Sciences
Street address
Ahvaz, Golestan, Esfand Street, Ahvaz University of Medical Sciences, University Research and Technology Center
City
Ahvaz
Province
Khouzestan
Postal code
61357-15794
Approval date
2022-12-10, 1401/09/19
Ethics committee reference number
IR.AJUMS.REC.1401.449

Health conditions studied

1

Description of health condition studied
Anterior cruciate ligament reconstruction
ICD-10 code
ICD-10 code description

Primary outcomes

1

Description
Kinematic parameters of single leg hop test
Timepoint
Before and after applying tasks with different cognitive dimensions
Method of measurement
Three-dimensional motion capture

Secondary outcomes

empty

Intervention groups

1

Description
Participants performed the single-leg hoping test in one of four experimental conditions: hoping without a cognitive task, hoping with an auditory Stroop task, hoping with a visuospatial task, and hoping with a backward counting by 3. These interventions were performed for one session.
Category
Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center
Rehabilitation Research Center

Full name of responsible person
Nahid Pirayeh

Street address
Ahvaz, Golestan, Esfand Street, Ahvaz University of Medical Sciences, School of Rehabilitation

City
Ahvaz

Province
Khouzestan

Postal code
61357-15794

Phone
+98 61 3374 3101

Email
nahid_pt8287@yahoo.com

Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Ahvaz University of Medical Sciences

Full name of responsible person
Abdullah Rafiei

Street address
Ahvaz, Golestan, Esfand Street, Ahvaz University of Medical Sciences

City
Ahvaz

Province
Khouzestan

Postal code
61357-15794

Phone
+98 61 3373 8383

Email
itc@ajums.ac.ir

Grant name

Grant code / Reference number

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

Title of funding source
Ahvaz University of Medical Sciences

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
Ahvaz University of Medical Sciences

Full name of responsible person
Nahid Pirayeh

Position
Associate professor

Latest degree
Ph.D.

Other areas of specialty/work
Physiotherapy

Street address
Ahvaz, Golestan, Esfand Street, Ahvaz University of Medical Sciences, Faculty of Rehabilitation

City
Ahvaz

Province
Khouzestan

Postal code
61357-15794

Phone
+98 61 3374 3101

Email
nahid_pt8287@yahoo.com

Person responsible for scientific inquiries

Contact

Name of organization / entity
Ahvaz University of Medical Sciences

Full name of responsible person
Nahid Pirayeh

Position
Associate professor

Latest degree
Ph.D.

Other areas of specialty/work
Physiotherapy

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Ahvaz, Golestan, Esfand Street, Ahvaz University of Medical Sciences, Faculty of Rehabilitation

City
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Province
Khouzestan

Postal code
61357-15794

Phone
+98 61 3374 3101

Email
nahid_pt8287@yahoo.com

Person responsible for updating data

Contact

Name of organization / entity
Ahvaz University of Medical Sciences

Full name of responsible person
Nahid Pirayeh
Position
Associate professor
Latest degree
Ph.D.
Other areas of specialty/work
Physiotherapy
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Ahvaz, Golestan, Esfand Street, Ahvaz University of Medical Sciences, Faculty of Rehabilitation
City
Ahvaz
Province
Khouzestan
Postal code
61357-15794
Phone
+98 61 3374 3101
Email
nahid_pt8287@yahoo.com

Sharing plan

Deidentified Individual Participant Data Set (IPD)
Yes - There is a plan to make this available
Study Protocol
No - There is not 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
Most data is shareable.
When the data will become available and for how long
Access period begins after results are published.
To whom data/document is available
The data will be available to physiotherapists.
Under which criteria data/document could be used
Researchers and physiotherapists
From where data/document is obtainable
Applicants can contact the following email for more information: nahid_pt8287@yahoo.com
What processes are involved for a request to access data/document
After authentication and if approved by the people participating in the study, the individual can receive the information.
Comments