Clinical Trial Protocol
Iranian Registry of Clinical Trials

07 Nov 2026

Investigating the effects of mental fatigue on functional tests during a cognitive dual task in athletes with and without chronic ankle instability

Protocol summary

Study aim

Investigating the effect of mental fatigue on functional tests during cognitive dual task in athletes with and without chronic ankle instability.

Design

This study is a double-blind randomized, controlled pretest–posttest experimental study. Participants will be randomly allocated in a 1:1 ratio using block randomization to either a 30-minute mental-fatigue condition or a control condition. Functional performance and cognitive-task performance will be assessed before and immediately after the experimental condition under both single-task and cognitive dual-task conditions.

Settings and conduct

The study will be conducted at the rehabilitation research center, Ahvaz, Iran. Participant recruitment will be carried out through physiotherapy centers and sports teams in Ahvaz. All experimental procedures, including the mental-fatigue/control protocols and functional performance assessments, will be performed in a controlled and standardized laboratory environment at the study center.

Participants/Inclusion and exclusion criteria

Age 18–45 years A history of at least one significant lateral ankle sprain, with the initial sprain occurring at least 12 months before study enrollment. The most recent ankle sprain occurring more than 3 months before study enrollment. A history of recurrent episodes of ankle giving way, recurrent sprain, and/or a persistent feeling of ankle instability. An IdFAI score >11.

Intervention groups

Participants will first be stratified according to ankle status, and within each stratum they will be randomly allocated by block randomization to the mental-fatigue or control condition. The mental-fatigue groups will perform a 30-minute incongruent visual Stroop task, whereas the control groups will watch a non-emotional documentary for the same duration.

Main outcome variables

the modified Star Excursion Balance Test, Side-Hop Test, and Figure-of-8 Hop Test.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20260727070388N2**
Registration date: **2026-09-12, 1405/06/21**
Registration timing: **prospective**

Last update: **2026-09-12, 1405/06/21**
Update count: **0**

Registration date

2026-09-12, 1405/06/21

Registrant information

Name

Nahid Pirayeh

Name of organization / entity

Country

Iran (Islamic Republic of)

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+98 61 3554 3611

Email address

pirayeh-n@ajums.ac.ir

Recruitment status

recruiting

Funding source

Expected recruitment start date

2026-09-23, 1405/07/01

Expected recruitment end date

2026-11-21, 1405/08/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date
empty

Scientific title
Investigating the effects of mental fatigue on functional tests during a cognitive dual task in athletes with and without chronic ankle instability

Public title
Investigating the effects of mental fatigue on functional tests during a cognitive dual task in athletes with and without chronic ankle instability

Purpose
Health service research

Inclusion/Exclusion criteria

Inclusion criteria:
A history of at least one significant lateral ankle sprain, with the initial sprain occurring at least 12 months before study enrollment. The most recent ankle sprain occurring more than 3 months before study enrollment. Regular participation in sports activities. A history of recurrent episodes of ankle giving way, recurrent sprain, and/or a persistent feeling of ankle instability. An IdFAI score >11. Ability to understand the study instructions and complete the cognitive and functional performance tests. Ability to read and write Persian. Age 18–45 years

Exclusion criteria:

Age
From **18 years** old to **45 years** old

Gender
Both

Phase
N/A

Groups that have been masked

- Participant
- Outcome assessor

Sample size
Target sample size: **60**

Randomization (investigator's opinion)
Not randomized

Randomization description

Blinding (investigator's opinion)
Double blinded

Blinding description
The outcome assessor responsible for functional performance testing will be blinded to participants' experimental allocation. The data analyst will also be blinded to group identity during the primary statistical analysis by using coded group labels. Thus, blinding will be maintained for the outcome assessor and data analyst, while participants will be blinded to the study hypothesis and the expected direction of the effects.

Placebo
Not used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Ethics committee of Ahvaz 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
2024-11-23, 1403/09/03

Ethics committee reference number
IR.AJUMS.REC.1403.448

Health conditions studied

1

Description of health condition studied
chronic ankle instability

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description
the modified Star Excursion Balance Test, Side-Hop Test, and Figure-of-8 Hop Test

Timepoint
before and immediately after the assigned condition (mental fatigue or control)

Method of measurement
dual task cost for distance of the modified Star Excursion Balance Test, time of Side-Hop Test, and time of Figure-of-8 Hop Test

Secondary outcomes

1

Description
Cognitive task performance

Timepoint
before and immediately after the assigned condition (mental fatigue or control)

Method of measurement
Calculate the number of correct answers/total number of answers *100

Intervention groups

1

Description
Intervention group: The mental-fatigue groups will perform a 30-minute incongruent visual Stroop task
Category
Rehabilitation

2

Description
Control group: The control group will watch a non-emotional documentary for 30-minute.
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 Blvd, Esfand Street, Ahvaz University of Medical Sciences, School of Rehabilitation
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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
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Ahvaz, golestan bulvar, esfand Street, Ahvaz university of Medical Sciences
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rafiei-a@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
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Person responsible for updating data

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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