

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

The Effects of Visual Feedback on Balance and Proprioception in Military Athletes with Anterior Cruciate Ligament (ACL) Injury

Protocol summary

Study aim

The effect of visual biofeedback on static, dynamic and proprioception, balance in military athletes with anterior cruciate ligament injury

Design

Randomized clinical trial with a control group parallel to the size of 30 participants, blinded

Settings and conduct

In this study, the participants were randomly divided into two groups of observation and control (n = 15). The balance of the subjects was evaluated by the Berg Balance Scale. The profound sense of the subjects was recorded using a system of digital photographic, non-reflective markers and analysis with Digimizer software version 5.3.4. In the control group, the exercises were received with visual feedback. At the end of the re-evaluation, the participants were evaluated in terms of balance and proprioception. The exercises were done by both groups for 4 weeks and 3 sessions for half an hour each week. The study was performed at the orthopedic clinic of Baqiyatallah hospital.

Participants/Inclusion and exclusion criteria

ACL damage; lack of cognitive impairment; vision and hearing; lack of any muscular and systemic nervous system; limb length difference (more than 1 cm), spastic cerebral palsy; drug addiction or alcohol, and any complications Disturbance of the balance; absence of neurological diseases or uncontrolled seizures before and during the intervention

Intervention groups

Both groups performed equilibrium exercises for 4 weeks and 3 sessions per week for half an hour, except that the experimental group received these exercises with visual feedback

Main outcome variables

Static and dynamic balance; proprioception; Angle reconstruction error

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20181010041300N1**

Registration date: **2018-12-24, 1397/10/03**

Registration timing: **retrospective**

Last update: **2018-12-24, 1397/10/03**

Update count: **0**

Registration date

2018-12-24, 1397/10/03

Registrant information

Name

javad naghizad

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2018-06-22, 1397/04/01

Expected recruitment end date

2018-09-23, 1397/07/01

Actual recruitment start date

2018-06-23, 1397/04/02

Actual recruitment end date

2018-09-27, 1397/07/05

Trial completion date

2018-09-27, 1397/07/05

Scientific title

The Effects of Visual Feedback on Balance and Proprioception in Military Athletes with Anterior Cruciate Ligament (ACL) Injury

Public title

Effects of Visual Feedback on Balance and Proprioception in Athletes with ACL Injury

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Had an ACL injury that has been approved by the orthopedic specialist There are no cognitive impairment, visual acuity and hearing loss (wearing glasses and mirrors) No muscular and systemic nervous system impairment (diabetes and rheumatism) No difference in limb length (more than 1 cm) Spastic cerebral palsy Drug addiction or alcohol abuse; and any disorder affecting balance (atrial fibrillation, stroke, etc.) The absence of neurological or uncontrolled seizures before and during the intervention

Exclusion criteria:

Unwillingness to cooperate Missing more than 3 sessions Being admitted to the hospital Perform surgery Fracture

Age

From **18 years** old to **30 years** old

Gender

Both

Phase

N/A

Groups that have been masked

- Participant

Sample size

Target sample size: **24**

Actual sample size reached: **30**

Randomization (investigator's opinion)

Randomized

Randomization description

Individuals were randomly assigned to either control or intervention group.

Blinding (investigator's opinion)

Single blinded

Blinding description

The participants had no connection with each other and did not know their role as an intervention or control group.

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

The Ethics Committee of the University of Medical Sciences

Street address

BaqiatallahUniversity of Medical Sciences. Mullasadra Street, Vanak Square, Tehran

City

tehran

Province

Tehran

Postal code

1435916471

Approval date

2018-03-17, 1396/12/26

Ethics committee reference number

IR.BMSU.REC.1396.521

Health conditions studied

1

Description of health condition studied

Assessment of balance and proprioception in patients with anterior cruciate ligament injury

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Balance Score in the Berg Balance Scale test

Timepoint

Balance assessment before and after the intervention

Method of measurement

Berg Balance Scale

2

Description

The amount of error in the proprioception in the reconstruction of the target angle

Timepoint

Proprioception assessment before and after the intervention

Method of measurement

With a system of digital photographic, non-reflective markers and analysis with Digimizer software, version 5.3.4 was recorded.

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: Individuals with anterior cruciate ligament injury who received balance exercises with

visual feedback for 4 weeks and 3 sessions per week.

Category

Rehabilitation

2

Description

Control group: Individuals with anterior cruciate ligament injury who received balance exercises without vision feedback for 4 weeks and 3 sessions per week.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Baqiatallah hospital

Full name of responsible person

Alireza shamsoddini

Street address

Baqiatallah hospital. Mullasadra Street, Vanak Square, Tehran

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Sponsors / Funding sources

1

Sponsor

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Bagheiat-allah University of Medical Sciences

Full name of responsible person

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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

Bagheiat-allah 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

Bagheiat-allah University of Medical Sciences

Full name of responsible person

Javad naghizad

Position

Student

Latest degree

Bachelor

Other areas of specialty/work

Occupational Therapy

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Other areas of specialty/work

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

No - There is not a plan to make this available

Justification/reason for indecision/not sharing IPD

security issues

Study Protocol

No - There is not a plan to make this available

Statistical Analysis Plan

No - There is not a plan to make this available

Informed Consent Form

No - There is not a plan to make this available

Clinical Study Report

No - There is not a plan to make this available

Analytic Code

No - There is not a plan to make this available

Data Dictionary

No - There is not a plan to make this available