

Clinical Trial Protocol

Iranian Registry of Clinical Trials

11 Sep 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)

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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	
<u>1</u>	
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	
<u>1</u>	
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	
<u>1</u>	
Description	Balance Score in the Berg Balance Scale test
Timepoint	Balance assessment before and after the intervention
Method of measurement	Berg Balance Scale
<u>2</u>	
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	
<u>1</u>	
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

Name of organization / entity

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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Person responsible for scientific inquiries

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Person responsible for updating data

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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