# Clinical Trial Protocol
# Iranian Registry of Clinical Trials

22 Nov 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 proprioceotion, 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 proprioceotion. 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**

+98 21 7756 1721

**Email address**

j.naghizad_ot@sbmu.ac.ir

**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

**City**

Tehran

**Province**

Tehran

**Postal code**

1435915371

**Phone**

+98 21 8805 0436

**Email**

info@baq.ir

**Web page address**

https://baq.bmsu.ac.ir/Portal/Home/

## Sponsors / Funding sources

**1**

**Sponsor**

**Name of organization / entity**

Bagheiat-allah University of Medical Sciences

**Full name of responsible person**

Aliraza shamsoddini

**Street address**

Mullasadra Street,Vanak Square,Tehran

**City**

Tehran

**Province**

Tehran

**Postal code**

1435916471

**Phone**

+98 21 8804 0060

**Email**

info@bmsu.ac.ir

**Web page address**

https://www.bmsu.ac.ir

**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

**Street address**

No.10, kavian Ave, Yosef abad Blvd, tehran

**City**

Tehran

**Province**

Tehran

**Postal code**

1431993431

**Phone**

+98 21 8872 1400

**Email**

j.naghizad1994@gmail.com

## Person responsible for scientific inquiries

**Contact**

**Name of organization / entity**

Bagheiat-allah University of Medical Sciences

**Full name of responsible person**

Aliraza shasoddini

**Position**

Assistant professor

**Latest degree**

Ph.D.

**Other areas of specialty/work**

Physiology

**Street address**

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

**City**

Tehran

**Province**
Tehran

**Postal code**
1435916471

**Phone**
+98 21 8804 0060

**Email**
alirezaot@bmsu.ac.ir

## Person responsible for updating data

**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

**Street address**
No10. kavian Ave. Yosef abad Blvd, Tehran

**City**
Tehran

**Province**
Tehran

**Postal code**
1431993134

**Phone**
+98 41 4454 2484

**Email**
j.naghizad1994@gmail.com

## 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