

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

18 Jun 2026

### The effect of six weeks of motor control exercises on selected kinetic, kinematic and lower extremity functional status in male professional athletes with anterior cruciate ligament reconstruction

#### Protocol summary

##### Study aim

The effect of six weeks of motor control exercises on kinetic, kinematic and lower extremity functional status in male athletes with anterior cruciate ligament reconstruction should be investigated.

##### Design

Clinical trial with a control group based on community with a parallel group

##### Settings and conduct

After the selection and entry of the participants in the Physical Education Research Institute, pre-intervention tests are carried out using isokinetic and motion analysers and exercises at the gym. After 6 weeks of training then tests such as pre-test conditions at the Research Institute of Science Sports are done

##### Participants/Inclusion and exclusion criteria

Inclusion criteria: having the surgery of anterior cruciate ligament using auto graft hamstring for the first time, Passing 6 months after the surgery, Having at least 2 years of experience in the fields of Handball, Basketball, Football and Volleyball in the provincial level, Not having any specific pain and swelling in the knee, Aged between 18-30 , Having completed physiotherapy course.

Exclusion criteria: Hearing problems, balance problems

##### Intervention groups

control group:current exercises such as double leg squat, double leg press and lunges prescribed by surgeon within six weeks each week two sessions. Intervention group: Intervention group do the current exercises the surgeon prescribes for the athletes. Also are needed to do the external motor control exercises such as single leg squat in front of a barrier cone, landing in front of the barrier, single leg lunges in front of a barrier, countermoment jump, standing on the Boso ball with a bar foam and jumping along a straight line during six weeks, each week for two sessions.

##### Main outcome variables

Joint angles such as (trunk flexion, knee flexion and knee valgus while landing), quadriceps power , hamstring power

#### General information

##### Reason for update

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT20180412039278N1**

Registration date: **2018-12-21, 1397/09/30**

Registration timing: **prospective**

Last update: **2019-10-04, 1398/07/12**

Update count: **1**

##### Registration date

2018-12-21, 1397/09/30

##### Registrant information

##### Name

mohammad ghaderi

##### Name of organization / entity

The university of kharazmi

##### Country

Iran (Islamic Republic of)

##### Phone

+98 31 3559 1641

##### Email address

std\_mohammad.ghaderi@khu.ac.ir

##### Recruitment status

**Recruitment complete**

##### Funding source

##### Expected recruitment start date

2018-12-24, 1397/10/03

##### Expected recruitment end date

2019-01-07, 1397/10/17

##### Actual recruitment start date

empty

**Actual recruitment end date**  
empty

**Trial completion date**  
empty

**Scientific title**  
The effect of six weeks of motor control exercises on selected kinetic, kinematic and lower extremity functional status in male professional athletes with anterior cruciate ligament reconstruction

**Public title**  
Effect of feedback training on rehabilitation of anterior cruciate ligament

**Purpose**  
Prevention

**Inclusion/Exclusion criteria**  
**Inclusion criteria:**  
All patients who have first performed anterior cruciate ligament restoration using hamstring auto grafting method. Six months from the date of surgery. Having Completed the physiotherapy course. No swelling and pain in the knee. Having done one of the sports (Basketball\_Football\_Volleyball\_Handball) for at least two years in the provincial level. Aged between 18 and 30 years.  
**Exclusion criteria:**  
Having hearing problems Affected by any condition abnormalities affecting the research process including the Femoral anteversion, genu valgum, genu varum, tibia rotation, and flat foot (recognizable by standard clinical methods) Participation in any rehabilitation program for anterior cruciate ligament

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

**Gender**  
Male

**Phase**  
N/A

**Groups that have been masked**  
*No information*

**Sample size**  
Target sample size: **25**

**Randomization (investigator's opinion)**  
Randomized

**Randomization description**  
A) Randomization method: Simple randomization (random number table) B) Building Random sequence method: Determining beforehand reading the table (up, down, right, left) then we start reading numbers from 0 to 50 intervention groups and 51 to 99 control groups. C) Randomization unit: Individual D) Randomization Tool: Random number table, sealed envelopes (for making random sequences) E) Concealment: Snose method A number of aluminum-covered envelopes (in order to keep the contents of the envelopes unclear) are prepared and each random sequence created on the card is recorded and the cards are inserted into the envelopes respectively. In order to maintain a random sequence, the numbering of the envelopes on the outer surface is done in the same order. Finally, the flap is

closed in pockets and placed in the box, respectively. At the time of registration of the participants, according to the order in which the participants are entered, one of the envelopes is opened and the allocated group of that participant is made known.

**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 Shahid Beheshti University of Medical Sciences

**Street address**

Akhtar Hospital, Gheyariyeh

**City**

tehran

**Province**

Tehran

**Postal code**

1145676914

**Approval date**

2016-07-28, 1395/05/07

**Ethics committee reference number**

IR.SBMU.RETECH.REC.1397.313

**Health conditions studied**

1

**Description of health condition studied**

injury of the anterior cruciate ligament

**ICD-10 code**

S83.5

**ICD-10 code description**

Sprain of cruciate ligament of knee

**Primary outcomes**

1

**Description**

Dynamic knee valgus angle during descent

**Timepoint**

Before the intervention and the end of the intervention

**Method of measurement**

Cortex Movement Analyzer

## 2

### **Description**

Knee flexion during landing

### **Timepoint**

Before and after the intervention

### **Method of measurement**

Cortex Movement Analyzer

## 3

### **Description**

trunk flexion during landing

### **Timepoint**

Before and after the intervention

### **Method of measurement**

Cortex Movement Analyzer

## **Secondary outcomes**

## 1

### **Description**

Quadriceps power

### **Timepoint**

Before and after the intervention

### **Method of measurement**

Biodex 4 isokinetic system

## 2

### **Description**

Hamstring power

### **Timepoint**

Before and after the intervention

### **Method of measurement**

Biodex 4 isokinetic system

## **Intervention groups**

## 1

### **Description**

Intervention group: Intervention group do the current exercises the surgeon prescribes for the athletes. Also are needed to do the external motor control exercises such as single leg squat in front of a barrier cone, landing in front of the barrier, single leg lunges in front of a barrier, countermoment jump, standing on the Boso ball with a bar foam and jumping along a straight line during six weeks, each week for two sessions.

### **Category**

Rehabilitation

## 2

### **Description**

Control group: current exercises such as double leg squat, double leg press and lunges prescribed by surgeon and or physiotherapist within six weeks each week two sessions.

### **Category**

Rehabilitation

## **Recruitment centers**

## 1

### **Recruitment center**

#### **Name of recruitment center**

Akhtar Hospital

#### **Full name of responsible person**

Sohrab Keyhai

#### **Street address**

Akhtar Hospital, Gheydariyeh

#### **City**

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#### **Province**

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#### **Email**

akhtarhospital@sbm.ac.ir

## **Sponsors / Funding sources**

## 1

### **Sponsor**

#### **Name of organization / entity**

Kharazmi university

#### **Full name of responsible person**

Jafar Jahanpanah

#### **Street address**

Kharazmi University, No.43. South Mofatteh Ave,  
Tehran, iran

#### **City**

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#### **Province**

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#### **Postal code**

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#### **Phone**

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#### **Email**

jahanpanah@khu.ac.ir

#### **Grant name**

#### **Grant code / Reference number**

#### **Is the source of funding the same sponsor organization/entity?**

Yes

#### **Title of funding source**

Kharazmi university

#### **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**

Kharazmi university

**Full name of responsible person**

Mohammad Ghaderi

**Position**

Student

**Latest degree**

Master

**Other areas of specialty/work**

Sport Sciences

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**Person responsible for scientific inquiries****Contact****Name of organization / entity**

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**Full name of responsible person**

Amir Letafatkar

**Position**

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**Latest degree**

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**Other areas of specialty/work**

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**Full name of responsible person**

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**Position**

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**Latest degree**

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**Other areas of specialty/work**

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**Email**

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**Sharing plan****Deidentified Individual Participant Data Set (IPD)**Undecided - It is not yet known if there will be a plan to  
make this available**Study Protocol**Undecided - It is not yet known if there will be a plan to  
make this available**Statistical Analysis Plan**Undecided - It is not yet known if there will be a plan to  
make this available**Informed Consent Form**

Yes - There is a plan to make this available

**Clinical Study Report**Undecided - It is not yet known if there will be a plan to  
make this available**Analytic Code**Undecided - It is not yet known if there will be a plan to  
make this available**Data Dictionary**Undecided - It is not yet known if there will be a plan to  
make this available**Title and more details about the data/document**The data that the output of the isokinetic device is  
without identifying the subjects of the subject.**When the data will become available and for how long**

6 months after printing results

**To whom data/document is available**

All interested persons

**Under which criteria data/document could be used**

There is no specific item.

**From where data/document is obtainable**

Send an email to mohammad.esf1995@gmail.com

**What processes are involved for a request to access data/document**After posting, it will take two weeks for the  
documentation to reach.

## Comments