

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

11 Sep 2026

### Comparison of Skill and Landing Technique in Basketball Players with Pes Planus: When Using Taping and Kinesiology Taping

#### Protocol summary

##### Study aim

To compare skill and landing error of basketball players with flat flexible pes planus when using taping and kinesiology taping

##### Design

Randomized crossover design

##### Settings and conduct

Among 112 basketball players who volunteered and met the inclusion criteria, 12 will be randomly selected as subjects. This is a randomized crossover study.

##### Participants/Inclusion and exclusion criteria

Inclusion criteria included a score of 0.89 on the Stahely Index, ankle problems, age range 18 to 25 years, and at least three years of regular participation in basketball. Exclusion criteria included a history of lower extremity injury in the past 12 months.

##### Intervention groups

The control group represents the no-taping condition, intervention group 1 represents the post-taping condition, and intervention group 2 represents the post-kinesio taping condition. Low-dye taping is an effective method to increase the height of the navicular and correct overpronated feet or flat feet. A two-inch-wide, hard, white zinc oxide adhesive plaster will be used for Low-dye taping. Depending on the size of the athlete's foot, about 5 to 6 strips can be used to completely cover the metatarsal part of the foot. The navicular sling kinesio taping method is also used to correct overpronated feet or flat feet. To perform navicular sling kinesio taping, a two-inch-wide blue kinesio tape from Rock Tape will be used. The taping site should be clean, dry, and hair-free. The evaluations include the assessment of landing errors and skills in different conditions (without taping, taping, and kinesio taping) and in a randomized and crossover manner (with a half-hour interval in each group and two minutes between each test) in three groups.

##### Main outcome variables

Skill, Landing errors

#### General information

##### Reason for update

##### Acronym

##### IRCT registration information

IRCT registration number: **IRCT20250622066219N1**

Registration date: **2025-10-20, 1404/07/28**

Registration timing: **retrospective**

Last update: **2025-10-20, 1404/07/28**

Update count: **0**

##### Registration date

2025-10-20, 1404/07/28

##### Registrant information

##### Name

Hemn Mohammadi

##### Name of organization / entity

University of Kurdistan

##### Country

Iran (Islamic Republic of)

##### Phone

+98 87 3366 4600

##### Email address

h.mohammadi@uok.ac.ir

##### Recruitment status

**Recruitment complete**

##### Funding source

##### Expected recruitment start date

2025-07-20, 1404/04/29

##### Expected recruitment end date

2025-09-21, 1404/06/30

##### Actual recruitment start date

empty

##### Actual recruitment end date

empty

##### Trial completion date

empty

**Scientific title**  
Comparison of Skill and Landing Technique in Basketball Players with Pes Planus: When Using Taping and Kinesiology Taping

**Public title**  
The effect of pes planus taping on landing and skill

**Purpose**  
Prevention

**Inclusion/Exclusion criteria**  
**Inclusion criteria:**  
Score 0.89 (Stahali Index) No ankle problems or misalignments. Age range 18–25 years. Having at least three years of regular basketball participation.  
**Exclusion criteria:**  
History of lower extremity injury in the past 12 months

**Age**  
From **18 years** old to **25 years** old

**Gender**  
Male

**Phase**  
N/A

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

**Sample size**  
Target sample size: **36**  
More than 1 sample in each individual  
Number of samples in each individual: **3**  
Taping, No taping, Kinesiotaping

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

**Randomization description**  
Random number generation software: Using the software (Random.org) and the numbers 3, 2, 1, three-digit numbers were generated as many as the number of subjects. For example, if subject number one came up with the number 312, the ones digit (no tapping condition), the tens digit (tapping condition), and the hundreds digit (kinesio-tapping condition) in the number 312 each represent a test condition. Therefore, in subject number one with the random number 312, the tests were first performed in the tapping condition (1), then in the no tapping condition (2), and finally in the kinesio-tapping condition (3).

**Blinding (investigator's opinion)**  
Not blinded

**Blinding description**

**Placebo**  
Not used

**Assignment**  
Crossover

**Other design features**

**Secondary Ids**

empty

**Ethics committees**

1

**Ethics committee**

**Name of ethics committee**  
Research Ethics Committee of the University of Kurdistan

**Street address**  
University of Kurdistan,Pasdaran Boulevard, Sanandaj City, Kurdistan Province, Iran

**City**  
Sanandaj

**Province**  
Kurdistan

**Postal code**  
6617715175

**Approval date**  
2024-04-27, 1403/02/08

**Ethics committee reference number**  
IR.UOK.REC.1403.012

**Health conditions studied**

1

**Description of health condition studied**  
flexible pes planus

**ICD-10 code**  
M95.9

**ICD-10 code description**  
Acquired deformity of musculoskeletal system, unspecified

**Primary outcomes**

1

**Description**  
Skill

**Timepoint**  
Before taping, another half hour and after taping, another hour and after kinesio taping

**Method of measurement**  
Throw test

2

**Description**  
Landing error

**Timepoint**  
Before taping, another half hour and after taping, another hour and after kinesio taping

**Method of measurement**  
Landing Error Scoring System Test

**Secondary outcomes**

1

**Description**  
Landing technique

**Timepoint**  
Before taping, another half hour, and after taping, another hour, and after kinesio taping

**Method of measurement**  
Landing Error Scoring System Test

## Intervention groups

### 1

#### Description

Control group: This group represents the condition where no taping is performed. Assessments in this condition include landing error and skill tests in the pre-tip condition. At the beginning, landing error tests and skill tests are taught, and then each test will be performed two to three times as a trial to familiarize yourself with the test. Initially, athletes will perform the Landing Error Test (LESS test), and after a two-minute rest, randomly perform all three skill tests (freestyle, jump shot, and layup tests) with a two-minute rest interval. Each test will be performed three times, and the best record for the athlete will be recorded as the test score.

#### Category

Prevention

### 2

#### Description

Intervention Group 1: This group represents the post-taping condition. The intervention in this group includes taping using the Low-dye method. Low-dye taping is an effective method for increasing navicular height and correcting overpronated or flat feet, and is also used to increase explosive power in jumping activities. This taping method appears to have a direct effect on the jumping pattern of flat-footed basketball players. A two-inch-wide, hard, white zinc oxide adhesive plaster will be used to perform Low-dye taping. In this method, the subject places their ankle in a neutral position. To apply taping, a tape is applied as an anchor, from the medial head of the first metatarsal joint, under the medial ankle, and behind the heel. It then continues from the medial ankle to the lateral head of the fifth metatarsal joint. Then, the tapes continue from the outer part of the foot and inward in parallel. All of these tapes extend from the outer part of the anchor to the sole and the inner part of the anchor. Depending on the size of the athlete's foot, about 5 to 6 tapes can be used to completely cover the metatarsal part of the foot. All assessments (landing errors and skills) in this situation are performed in a random and cross-over manner, half an hour after the assessment of the control group, and in the condition after applying the taping method by the Low-dye method, with a two-minute rest interval between each test.

#### Category

Prevention

### 3

#### Description

Intervention group 2: This group represents the situation after kinesio taping. The intervention in this group includes kinesio taping using the navicular sling method. This method is used to correct an overpronated foot or flat feet. To perform kinesio taping with the navicular sling, a two-inch wide blue kinesio tape from the Rock Tape brand will be used. The taping site should be clean,

dry, and hairless. The kinesio taping method begins on the top of the foot, so that the kinesio tape continues from the middle of the foot outward and over the metatarsals and extends to the fifth metatarsal bone, then extends from the bottom of the foot inward and over the first metatarsal, continuing under the navicular and upward, and then passing over the medial ankle. Then it is pulled outward and upward from the front of the ankle, passing over the outer ankle and stretching towards the back of the foot and above the Achilles tendon, and ends. All assessments (landing errors and skills) in this situation are performed in a random and cross-over manner, one hour after the assessment of the control group and half an hour after the assessment of the Low-dye taping group, in the conditions after applying kinesio taping using the Navicular Slink method, and with a two-minute rest interval between each test.

#### Category

Prevention

## Recruitment centers

### 1

#### Recruitment center

##### Name of recruitment center

Physical Education Laboratory, University of Kurdistan

##### Full name of responsible person

Hemn Mohammadi

##### Street address

University of Kurdistan, Pasdaran Boulevard, Sanandaj City, Kurdistan Province, Iran

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## Sponsors / Funding sources

### 1

#### Sponsor

##### Name of organization / entity

University of Kurdistan

##### Full name of responsible person

Ali Akbar Mozafari

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University of Kurdistan, Pasdaran Boulevard, Sanandaj City, Kurdistan Province, Iran

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**Grant name**  
Annual supervisor grant  
**Grant code / Reference number**  
1403-1404  
**Is the source of funding the same sponsor organization/entity?**  
Yes  
**Title of funding source**  
University of Kurdistan  
**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**  
The University of Kurdistan  
**Full name of responsible person**  
Hemn Mohammadi  
**Position**  
Associate professor  
**Latest degree**  
Ph.D.  
**Other areas of specialty/work**  
Sports injury and corrective exercises  
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## Person responsible for scientific inquiries

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**Position**  
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## Person responsible for updating data

**Contact**  
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The University of Kurdistan  
**Full name of responsible person**  
Hemn Mohammadi  
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## Sharing plan

### **Deidentified Individual Participant Data Set (IPD)**

Yes - There is a plan to make this available

### **Study Protocol**

Yes - There is 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**

All data is potentially shareable after de-identifying individuals.

### **When the data will become available and for how long**

Access period begins three months after results are published.

### **To whom data/document is available**

In addition to academic researchers, people involved in sports medicine can also apply for them.

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

After receiving the request email, if approved by the university's central library, the data will be sent within a week.

### **From where data/document is obtainable**

Corresponding author's email address

### **What processes are involved for a request to access data/document**

After approved by the university's central library, the data will be sent within a week.

### **Comments**

no