

# The effect of ankle tape on joint position sense after local muscle fatigue

<b>Submission date</b> 10/12/2017	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
<b>Registration date</b> 12/12/2017	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
<b>Last Edited</b> 30/01/2018	<b>Condition category</b> Other	<input type="checkbox"/> Individual participant data

## Plain English summary of protocol

### Background and study aims

An ankle sprain is an injury to the tough bands of tissue (ligaments) that surround and connect the bones of the leg to the foot. During physical activity, the ankle may twist inward as a result of sudden or unexpected movement. Fatigue and joint position sense are two elements that affect ankle sprain. Joint position sense measures the individual's ability to perceive the position of a joint. Fatigue impairs joint position sense, which makes the incidence of ankle sprain high. Ankle tape is widely used to prevent ankle sprain, but is still not approved if ankle tape improve joint position sense after fatigue. The aim of this study is to examine if ankle tape can affect the joint position of the ankle after muscle fatigue.

### Who can participate?

Healthy adults aged 16 to 40 years old.

### What does the study involve?

Participants are randomly allocated to one of two groups. Those in the first group do not receive any ankle tape. Those in the second group receive ankle tape. Participants are measured before and after muscle fatigue to assess the impact of the ankle tape.

### What are the possible benefits and risks of participating?

There are no direct benefits or risks associated with participating.

### Where is the study run from?

University Hospital Marburg (Germany)

### When is the study starting and how long is it expected to run for?

December 2011 to December 2013

### Who is funding the study?

University Clinic Marburg (Germany)

Who is the main contact?

1. Mr Akram Jahjah (Scientific)
2. Dr El-Zayat Bilal Farouk (Scientific)

## Contact information

### Type(s)

Scientific

### Contact name

Mr Akram Jahjah

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### Type(s)

Scientific

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Dr El-Zayat Bilal Farouk

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Marburg  
Germany  
35033

## Additional identifiers

### Protocol serial number

DRKS00013590

## Study information

### Scientific Title

The effect of ankle tape on joint position sense after local muscle fatigue: a randomized controlled trial

### Study objectives

Does the tape affect the joint position sense on the ankle after muscle fatigue in healthy subjects?

### Ethics approval required

Old ethics approval format

### **Ethics approval(s)**

Ethical committee of Philipps-University Marburg (Germany), 17/04/2012, ref: study 23\12

### **Study design**

Interventional single-centre randomised controlled trial

### **Primary study design**

Interventional

### **Study type(s)**

Treatment

### **Health condition(s) or problem(s) studied**

Healthy subjects

### **Interventions**

Participants are randomly distributed into control (without ankle tape) and intervention (with ankle tape) groups. In both groups, joint position sense was measured before and after local muscle fatigue. For participants in the intervention group, tape is applied just before the first test and it was removed after the second test. Preventive taping for injuries to the lateral aspect of the ankle joint is used and applied according to Macdonald's method. Fatigue protocol was applied by Biodex System Isokinetic Dynamometer 3. The local load applied to the ankle joint consisted of 30 consecutive maximal concentric/concentric contractions of the ankle evertors and invertors in the range of motion ROM (30° of eversion and 30° of inversion) at an angular velocity of 120°/s. Immediately after the fatigue protocol, joint position sense testing is initiated using the same methods as in the testing before fatigue, to minimize the effects related to recovery from fatigue.

### **Intervention Type**

Supplement

### **Primary outcome(s)**

1. Active joint position sense (Joint position sense in Absolute Error (AE) and variable Error (VE)) is measured using the Biodex 3 at baseline
2. Passive joint position sense is measured using the Biodex 3 at baseline
3. Active joint position sense is measured using Biodex 3 after fatigue
4. Passive joint position sense is measured using Biodex 3 after fatigue

### **Key secondary outcome(s)**

1. Fatigue Index (Fatigue Index = (initial peak torque - final peak torque) / initial peak torque \* 100) is measured using Biodex 3 after first test
2. Work is measured using Biodex 3 after first test
3. Work at first third measured using Biodex 3 after first test
4. Work at last third measured using Biodex 3 after first test

### **Completion date**

01/12/2013

# Eligibility

## Key inclusion criteria

Healthy volunteers between 16 and 40 years of age

## Participant type(s)

Healthy volunteer

## Healthy volunteers allowed

No

## Age group

Adult

## Sex

All

## Key exclusion criteria

1. History of lower extremity injuries
2. Neurologic deficits
3. Rheumatologic disease
4. Hypermobility

## Date of first enrolment

01/05/2012

## Date of final enrolment

30/08/2012

# Locations

## Countries of recruitment

Germany

## Study participating centre

**University Hospital Marburg**  
Apartment for Physiotherapy  
Baldingerstrasse  
Marburg  
Germany  
35033

# Sponsor information

## Organisation

Universitätsklinikum Gießen und Marburg, Standort Marburg

ROR

<https://ror.org/032nzv584>

## Funder(s)

**Funder type**

Hospital/treatment centre

**Funder Name**

University Clinic Marburg

## Results and Publications

**Individual participant data (IPD) sharing plan**

The datasets generated during and/or analysed during the current study are/will be available upon request from Akram Jahjah at [akramjahjah@yahoo.com](mailto:akramjahjah@yahoo.com).

**IPD sharing plan summary**

Available on request

**Study outputs**

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Results article</a>	results	09/01/2018		Yes	No