Understanding motor learning to prevent ankle and knee injuries in sports: a novel approach

Published: 28-11-2018 Last updated: 24-08-2024

The primary objective of this project is to map differences in joint loading between athletes receiving visual feedback and those who will not receive visual feedback in both retention and transfer to field-specific situations. From there, we will...

Ethical review	Approved WMO
Status	Recruiting
Health condition type	Other condition
Study type	Interventional

Summary

ID

NL-OMON46048

Source ToetsingOnline

Brief title

Understanding motor learning to prevent ankle and knee injuries in sports

Condition

• Other condition

Synonym

nvt

Health condition

gezonde proefpersonen

Research involving

Human

1 - Understanding motor learning to prevent ankle and knee injuries in sports: a nov ... 3-05-2025

Sponsors and support

Primary sponsor: Universitair Medisch Centrum Groningen **Source(s) of monetary or material Support:** NWO ZonMw Veni beurs

Intervention

Keyword: biomechanics, injury prevention, lower extremity, motor learning, transfer

Outcome measures

Primary outcome

Ankle and knee joint loads (3D kinematics en kinetics) in the lab and in the

field.

Secondary outcome

- Adherence to instructed attentional focus

- Motivation

** interest/enjoyment (e.g. variation (enjoyment), satisfaction, paired

practice experience, progression (challenging), affect/interest, concentration,

context relatedness)**

- Competence:

perceived (self-partner) competence/self efficacy (ability beliefs)

effort

**- Autonomy:

self directed practice choices

perceived choice

2 - Understanding motor learning to prevent ankle and knee injuries in sports: a nov ... 3-05-2025

Study description

Background summary

In 2013, 970.000 knee and 680.000 ankle injuries were registered for Dutch athletes, resulting in dramatically shortened athletic careers, work absenteeism, and proportionally high health care costs estimated at ×1.5 billion. Despite intense efforts put forward on prevention, the relative rate of injuries has remained unchanged, attesting to the ineffectiveness of current injury prevention practices. It is hypothesized that athletes who receive video feedback, reduce ankle and knee joint loading with better retention and transfer to the field, most likely reducing injury risk, compared to those receiving no visual feedback. *

Study objective

The primary objective of this project is to map differences in joint loading between athletes receiving visual feedback and those who will not receive visual feedback in both retention and transfer to field-specific situations. From there. we will build a valid argument for implementation of this innovative prevention method for trainers, coaches and athletes.

Study design

Randomized controlled trial (pre-post intervention design, comparing a visual+verbal (VISVER) group, a visual (VIS) group, and a control (CTRL) group on biomechanical outcome variables).

Intervention

During the lab sessions, the VISVER group will receive positive visual feedback from their best trial so far + positive verbal feedback concurrent with the video. The VIS group will receiving positive visual feedback from their best trial so far and the CTRL group will receive neutral visual feedback from their five baseline trials.*

Study burden and risks

Nature and extent of the burden and risks associated with participation, benefit and group relatedness: Minimal risk or discomforts, as physical injury or harm, to the subjects as a result of each procedure is involved in this study as this research proposal is viewed as involving little or no risk to human subjects. The main possible risk of injury is giving way during the performance of the task. However, this risk is considered very minimal and the probability and magnitude of harm or discomfort anticipated in the proposed research are not greater than those ordinarily encountered during the performance of routine daily activities. The speed required during testing is even lower than those on the field. The athletes will not do maximal testing, we are not interested in the magnitude of loading but the main goal is to look at how exactly they load there joints during landing. Also, testing will be done on a flat and even surface. Furthermore, in order to minimize the risk of injury, the subjects are well-trained healthy athletes and they have the opportunity to get familiar with the movements before starting the measurements. There have been no incidents reported in the literature involving similar experiments as in the current study.

Contacts

Public

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age

Adolescents (12-15 years) Adolescents (16-17 years)

Inclusion criteria

Young (12-18) healthy athletes from Regional Talent Centers basketball, volleyball and soccer.

Exclusion criteria

Injured, not part of RTC

Study design

Design

Study type:	Interventional
Intervention model:	Parallel
Allocation:	Randomized controlled trial
Masking:	Single blinded (masking used)
Control:	Active
Primary purpose:	Prevention

Recruitment

NL	
Recruitment status:	Recruiting
Start date (anticipated):	29-11-2018
Enrollment:	45
Туре:	Actual

Ethics review

Approved WMO	
Date:	28-11-2018
Application type:	First submission
Review commission:	METC Universitair Medisch Centrum Groningen (Groningen)
Approved WMO	

5 - Understanding motor learning to prevent ankle and knee injuries in sports: a nov ... 3-05-2025

Date:	20-07-2020
Application type:	Amendment
Review commission:	METC Universitair Medisch Centrum Groningen (Groningen)

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register CCMO ID NL65630.042.18