Design of a randomized controlled ACL injury prevention study.

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The implicit learning group will show better retention compared to the explicit learning group.

Ethische beoordeling	Positief advies
Status	Werving gestart
Type aandoening	-
Onderzoekstype	Interventie onderzoek

Samenvatting

ID

NL-OMON26424

Bron
Nationaal Trial Register

Aandoening

Prevention of ACL injuries

Ondersteuning

Primaire sponsor: University Medical Center Groningen
Center for Human Movement Sciences
University of Groningen
Overige ondersteuning: University Medical Center Groningen
Center for Human Movement Sciences
University of Groningen

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

The primary outcome measurements will be as follows:
1. Average EMG pattern of the gluteus maximus (GM), vastus medialis (VM), vastus lateralis (VL), medial hamstring (MH), lateral hamstring (LH), medial gastrocnemius (MG) and lateral

gastrocnemius (LG);
2. Muscle onset time (ie. the first burst in EMG as detected by the Santello algoritm prior to landing [68]) of the GM, VM, VL, MH, LH, MG and LG;
3. Muscle activity of the GM, VM, VL, MH, LH, MG and LG integrated over the interval from 100 milliseconds prior to foot contact to foot contact (preparatory interval) and from foot contact to the point of peak knee flexion (weight acceptance);
4. Muscle co-contraction (ie. using the integrated EMG of each muscle and the formula: [(less active muscle/more active muscle) X (sum of the integrated activity of both muscles)]73) of VL-MG, VL-LH, VM-LG and VM-MH over the interval from 100 milliseconds prior to foot contact to foot contact (preparatory interval) and from foot contact to the point of peak knee flexion (weight acceptance);
5. Hip, knee and ankle angles at IC, peak posterior GRF and the maximum values for each of those variables:
A. Abduction / adduction;
B. Flexion / extension;
C. External / internal rotation (only for hip and knee);
D. Knee angular displacement flexion angle.
6. Joint moments of hip, knee and ankle at IC, peak posterior GRF and the maximum values for each of those variables:
A. Abduction / adduction;
B. Flexion / extension;
C. External / internal rotation (only for hip and knee).
7. Peak vertical GRF (normalized to body weight);
8. Peak proximal anterior tibial shear force (normalized to body weight).

Toelichting onderzoek

Achtergrond van het onderzoek

N/A

Doel van het onderzoek

The implicit learning group will show better retention compared to the explicit learning group.

Onderzoeksopzet

To, 1 week post intervention (retention test 1 (t1)) and 1 month post intervention (retention test 2 (t2)).

Onderzoeksproduct en/of interventie

Two types of immediate feedback will be given:

Explicit feedback: After performing the sidestep cutting manoeuvres, subjects will immediately receive explicit instructions to improve their performance. Potential ACL injury risk factors include:

1. Increased knee valgus angle;

2. Decreased knee flexion angle;

3. Increased anterior tibial shear force;

4. Decreased hip flexion angle;

5. Increased hip internal rotation angle;

6. Increased knee internal rotation angle.

Items to improve these potential risk factors above will be mentioned to the subjects and subjects will be requested to minimise the load at the knee.

Implicit feedback: Subjects will undergo a dynamic visual feedback intervention. Each time after a subject has performed the task, a visual representation of the best performance so far of the whole body (3D posterior view) will be shown to the subject with the Basler recordings (Darwinian learning). No feedback or instructions at all will be given, however subjects will know in advance that there are superior and inferior ways to perform the task. The subject will search by him-/herself for the solution that fits best in their body; they explore and then select the performance which fits best.

Contactpersonen

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Wetenschappelijk

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Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

1. 18 years or older;

2. Playing basketball at the highest recreational level;

3. No history of major lower extremity injury or surgery;

4. No current or recent (6 months) injury to the entire lower extremity;

5. Able to participate in training and games for 100% at time of testing.

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

1. Any hip, knee or other relevant injury in the last 6 months prior to testing;

2. Any relevant previous injury or surgery at any joint of the lower extremity;

3. Any history of neurological, vestibular or visual impairment.

Onderzoeksopzet

Opzet

Type:	Interventie onderzoek
Onderzoeksmodel:	Parallel
Toewijzing:	Gerandomiseerd
Blindering:	Enkelblind
Controle:	Actieve controle groep

Deelname

Nederland

Status:	Werving gestart
(Verwachte) startdatum:	01-09-2010
Aantal proefpersonen:	90
Type:	Verwachte startdatum

Ethische beoordeling

Positief advies

Datum:	19-03-2010
Soort:	Eerste indiening

Registraties

Opgevolgd door onderstaande (mogelijk meer actuele) registratie

Geen registraties gevonden.

Andere (mogelijk minder actuele) registraties in dit register

Geen registraties gevonden.

In overige registers

Register	ID
NTR-new	NL2126
NTR-old	NTR2250
Ander register	METC UMC Groningen : 2009-142
ISRCTN	ISRCTN wordt niet meer aangevraagd.

Resultaten

Samenvatting resultaten

N/A