# Tailored exercises for elite youth football players

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Tailored exercises lower the injury risk significantly compared to regular exercises in elite youth football players with a high injury risk

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

# Samenvatting

### ID

NL-OMON24392

Bron NTR

Verkorte titel DVJT-study

#### Aandoening

Knee, Hamstring, Adductor, Ankle, Achilles, Prevention, Injury, Exercise

### Ondersteuning

Primaire sponsor: Erasmus Medical Center Overige ondersteuning: None

### **Onderzoeksproduct en/of interventie**

### **Uitkomstmaten**

#### Primaire uitkomstmaten

The Knee Abduction Moment (KAM) score. This is a validated and reliable method to predict the risk of knee injury.

# **Toelichting onderzoek**

#### Achtergrond van het onderzoek

#### Background of the study

Lower extremity injuries are a common and serious injury for elite youth football (soccer) players. It may lead to a prolonged absence from sports activities, which may cause a reduced performance and decreased quality of life. Multiple simple physical tests have been shown to be valid and reliable with the ability to estimate the prognosis of lower extremity injuries. Correction of potential deficits, measured with physical tests, can be achieved with specific neuromuscular training. It is known that the broadly implemented FIFA 11+ prevention program results in a decreased rate of lower extremity injuries in football players. However, the problem with this program is the fact that the players do not perform these non-tailored exercises. It is known that a tailored approach results in better implementation of neuromuscular training than a non-tailored approach. This would favour the implementation of a tailored prevention training program. It is currently unknown whether preventive exercises for frequent injuries are effective in improvement of test results and/or reduction of musculoskeletal injuries.

#### Objective of the study

Five physical tests will be performed: the Drop Vertical Jump Test (DVJT), Single Leg Balance Test (SLBT), Weight Bearing Dorsiflexion Lunge Test (WBDLT), adductor strength test and hamstring strength test using hand-held dynamometry (HHD). Players with an abnormal test outcome will be advised to perform a tailored neuromuscular training program at Excelsior Football club. The players at the Feyenoord Academy will undergo the Drop Vertical Jump Test (DVJT), Dorsiflexion Lunge Test (WBDLT), adductor strength test and hamstring strength test. No intervention will be provided in this group and they will perform regular football training.

The primary aim of this study is to investigate whether the specific test characteristics improve after a tailored neuromuscular training program.

#### Study design

Prospective controlled clinical trial. All measurements will be performed at baseline and after 12 weeks. Compliance to the exercise program and occurrence of musculoskeletal injuries will be registered during the 12 week period. Primary and secondary outcome measurements will be collected at baseline and 12 weeks.

Study population

100 healthy elite youth football players will be included in this study.

Intervention

Athletes with abnormal test outcome will receive a tailored intervention. The athletes perform tailored exercises (selected to improve their abnormal test outcome). These exercises are mainly based on the FIFA 11+ prevention program and will be executed three times a week during a 12-week period.

Primary study parameters/outcome of the study

- Difference in Drop Vertical Jump Test characteristics (Knee Abduction Moment-value) between the training group and the control group, three months after baseline measurements.

Secondary study parameters/outcome of the study

- Difference in test characteristics of Weight Bearing Dorsiflexion Lunge Test (WBDLT) between the training group versus the control group, three months after baseline measurements.

- Difference in test characteristics of Single Leg Balance Test (SLBT) between the training group versus the control group.

- Difference in test characteristics of the adductor strength test between the training and the control group.

- Difference in test characteristics of the hamstring strength test between the training group versus the control group.

- Correlation between difference in landing strategy with the DVJT (quantified as probability of high KAM) and compliance to the neuromuscular training program within the training group.

- Correlation between distance and angle of the Achilles with the WBDLT and compliance to the neuromuscular training program within the training group.

- Compliance to the exercise program
- Number of musculoskeletal injuries and time-off injuries

#### Doel van het onderzoek

Tailored exercises lower the injury risk significantly compared to regular exercises in elite youth football players with a high injury risk

#### Onderzoeksopzet

Baseline, 12 weeks

#### **Onderzoeksproduct en/of interventie**

Tailored exercises

# Contactpersonen

#### **Publiek**

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#### Wetenschappelijk

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# **Deelname eisen**

# Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

- Age 14-21 years.
- Male gender.
- Play football on an elite level at Excelsior football club or Feyenoord Academy.
- No musculoskeletal injuries at baseline during physical testing.

## Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

- Football player is not willing to participate in the study.
- Parents of the football player are not willing to sign informed consent form.
- Football player is not available in the week of the baseline physical testing during the trial period.

# Onderzoeksopzet

# Opzet

Туре:	Interventie onderzoek
Onderzoeksmodel:	Parallel
Toewijzing:	Gerandomiseerd
Blindering:	Open / niet geblindeerd
Controle:	Geneesmiddel

#### Deelname

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Werving gestopt
01-08-2016
100
Werkelijke startdatum

5 - Tailored exercises for elite youth football players 7-05-2025

# **Ethische beoordeling**

Positief advies Datum: Soort:

07-09-2016 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	NL5872
NTR-old	NTR6044
Ander register	: MEC-2016-237

# Resultaten

Samenvatting resultaten