Effect van eiwitsupplementen op spierpijn en spierschade na een hardloopwedstrijd

No registrations found.

Ethical review	Positive opinion
Status	Recruiting
Health condition type	-
Study type	Interventional

Summary

ID

NL-OMON22476

Source
Nationaal Trial Register

Brief title
Prorunning

Health condition

Delayed onset muscle soreness and muscle damage

Sponsors and support

Primary sponsor: Radboud University Medical Center Nijmegen
Source(s) of monetary or material Support: Radboud University Medical Center Nijmegen

Intervention

Outcome measures

Primary outcome

visual analogue scale (VAS) 24 hours post-race.

Secondary outcome

Secondary study outcomes:

o VAS score 48 and 72 hours post-race

o Short-Form Brief Pain Inventory (BPI-SF))

o Perceived soreness measured with a strain gauge algometer (subsample, n = 208)

o Creatine Kinase (CK) and Lactate dehydrogenase (LDH) (muscle damage marker) (subsample, n = 208)

o Short-Form Brief Fatigue Inventory (BFI-SF)

Study description

Background summary

Rationale:

Most exercise recovery strategies for endurance athletes solely focus on refueling and rehydration, without taking skeletal muscle repair and recovery into account. However, post-exercise repair and remodeling of skeletal muscle proteins provide the basis for training-induced adaptations that underpin increments in exercise performance. Dietary proteins may augment muscle repair by providing the “building blocks” (i.e. amino acids) for a positive protein synthesis balance to induce muscle repair following acute damage. Although many studies support the importance of sufficient protein ingestion in relation to resistance-type exercise for enhancing muscle mass and reducing muscle soreness, the role of protein supplementation for muscle repair and to reduce muscle soreness among endurance athletes has been less well studied.

Objective: The primary aim of the study is to compare the effects of post-exercise protein versus placebo supplementation on delayed onset muscle soreness among endurance runners (24 hrs post race). The secondary aim of the study is to compare the effects of protein versus placebo supplementation on muscle damage among endurance runners (24-48 hrs post race).

Study design: This double-blind randomized placebo-controlled trial will consist of 2 study arms. The effects of 15 km running exercise on muscle soreness and muscle damage will be examined in two groups: I) protein group (60 g protein per day for 3 days), II) placebo group (isocaloric placebo).

Study population: The study population comprises 416 participants aged between 30-60

years and participating in the 2018 Seven Hills Run.
Intervention (if applicable): Participants will be randomly allocated to one of the two groups. Participants will be instructed to ingest the protein or placebo supplement: 1) directly after finishing the running event, 2) prior to sleep at the same day, 3) during breakfast on the next three days, and 4) prior to sleep on the next two days.

Main study parameters/endpoints: The primary outcome in this study is muscle soreness at 24 hours after the exercise event for which the visual analog scale (VAS) will be used. Secondary outcome measures include the VAS score at 48 and 72 hours after the event, the Short-Form Brief Pain Inventory (BPI-SF) questionnaire to examine muscle soreness and muscle complaints and the Short-Form Brief Fatigue Inventory (BFI-SF) to assess the level of fatigue. Moreover, in a subsample of 50% (n=208) one venous blood sample per participant will be collected within 24 to 48 hours post-exercise to determine the muscle damage markers CK and lactate dehydrogenase (LDH) concentrations. In the same subsample perceived muscle soreness measured will be measured with a strain gauge algometer. Other important outcomes are habitual protein ingestion using a 24h recall, protein intake on the race day and 2 days post-exercise, medical history, rating of perceived exertion during the race, finish times, average heart rate during the run, training status and habitual physical activity and exercise training levels using the Short QUestionnaire to Assess Health-enhancing physical activity (SQUASH) and whether participants performed other exercises in the 2 days after the race.

Study objective

We hypothesize that endurance athletes receiving protein supplementation report a lower delayed onset muscle soreness score and lower muscle damage biomarker concentrations post-exercise compared to athletes receiving placebo supplementation.

Study design

24, 48, 72 hrs post-race

Intervention

Protein supplement (60 g protein/ d) versus isocaloric placebo

Contacts

Public

Scientific

Eligibility criteria

Inclusion criteria

- Between 30 and 60 years of age

- Able to understand and perform the study procedures

Exclusion criteria

Muscle soreness and muscle complaints in daily life (unrelated to exercise) upon enrolment

- Type I or type II diabetes

- Allergic or sensitive for milk proteins, eggs and soybeans, or lactose intolerant.

- Having been diagnosed with intestinal diseases, which will influence the uptake of protein (i.e. active inflammatory bowel disease, Crohn’s disease)

- Having been diagnosed with renal insufficiency

- Use of statins

Study design

Design

Study type:	Interventional
Intervention model:	Parallel
Allocation:	Randomized controlled trial
Masking:	Double blinded (masking used)
Control:	Placebo

Recruitment

NL
Recruitment status: Recruiting

Start date (anticipated):	17-10-2018
Enrollment:	416
Type:	Anticipated

Ethics review

Positive opinion

Date:	17-10-2018
Application type:	First submission

Study registrations

Followed up by the following (possibly more current) registration

ID: 46050
Bron: ToetsingOnline
Titel:

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

No registrations found.

In other registers

Register	ID
NTR-new	NL7356
NTR-old	NTR7564
CCMO	NL67354.072.18
OMON	NL-OMON46050

Study results