

Protein feeding prior to sleep as a dietary strategy to improve post-exercise recovery and muscle mass in young and elderly men.

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Protein feeding prior to sleep improves post-exercise recovery and muscle mass in young and elderly men.

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

Samenvatting

ID

NL-OMON27673

Bron

NTR

Verkorte titel

ProSleep

Aandoening

1. Sport recovery enhancement
2. Sarcopenia

Ondersteuning

Primaire sponsor: TI Food & Nutrition

Maastricht University Medical Centre+

Overige ondersteuning: TI Food & Nutrition

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

The primary outcome is muscle protein synthesis fractional synthetic rate (FSR). By taking a muscle biopsy prior to and just after sleep, muscle enrichments of amino acid tracer can be measured and used to calculate rate of muscle protein synthesis (FSR). Amino acid tracers will be provided by intravenous (IV) infusion and by intrinsically-labelled protein.

Toelichting onderzoek

Achtergrond van het onderzoek

Muscle protein synthesis rates are stimulated during periods of increased plasma amino acid availability. Sleep is a post-absorptive period in which there is decreased plasma amino acid availability. Protein provision prior to sleep may improve overnight muscle protein synthesis rates by increasing plasma amino acid levels.

Doel van het onderzoek

Protein feeding prior to sleep improves post-exercise recovery and muscle mass in young and elderly men.

Onderzoeksopzet

Muscle biopsies for muscle tracer enrichments will be taken just prior to sleep (24:00) and just after sleep (7:00).

Plasma samples will be taken throughout the night to assess plasma amino acids. In total, 152 ml of blood will be drawn.

Onderzoeksproduct en/of interventie

Elderly subjects are randomized into groups ingesting incremental protein amounts prior to sleep.

All young subjects perform a bout of resistance exercise before ingesting incremental amounts of protein prior to sleep.

Elderly subjects are randomized into groups ingesting incremental protein amounts prior to sleep (20 gram of protein, 40 gram of protein, 20 gram of protein + 1,5 gram leucine or

placebo).

A separate arm is evaluating the effect of resistance exercise and ingestion of 40 gram of protein prior to sleep.

Young subjects are randomized into groups ingesting incremental protein amounts prior to sleep (30 gram of protein, 30 gram of protein + 2 gram of leucine or placebo).

A separate arm is evaluating the effect of ingesting 30 gram of protein prior to sleep.

All experiments will commence at 17:30 and will be finished at 7:30 the next morning.

Contactpersonen

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Wetenschappelijk

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Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

1. Males;
2. Age: Between 18-35 or 65-85 yr;
3. BMI: 18.5-30 kg/m²;

3. Recreationally active (≥ 1 time/wk).

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

1. Smoking;

2. Type 2 diabetic;

3. Use of medications known to affect protein metabolism (i.e. corticosteroids, non-steroidal anti-inflammatories, or prescription strength acne medications) All co-morbidities (or a history of) interacting with mobility and muscle metabolism of the lower limbs (e.g. artrosis, arthritis, spasticity/rigidity, all neurological disorders and paralysis);

4. Use of anticoagulants, blood diseases, allergy for lidocain;

5. Patients suffering from PKU (Phenylketonuria);

6. Allergies to milk proteins (whey or casein);

7. Female;

8. For the elderly subjects: participation in any strength training program for the last 3 months.

Onderzoeksopzet

Opzet

Type:	Interventie onderzoek
Onderzoeksmodel:	Parallel
Toewijzing:	Gerandomiseerd
Blindering:	Enkelblind
Controle:	Placebo

Deelname

Nederland	
Status:	Werving gestart
(Verwachte) startdatum:	08-03-2013

Aantal proefpersonen: 98
Type: Verwachte startdatum

Ethische beoordeling

Positief advies
Datum: 07-03-2013
Soort: Eerste indiening

Registraties

Opgevolgd door onderstaande (mogelijk meer actuele) registratie

ID: 36991
Bron: ToetsingOnline
Titel:

Andere (mogelijk minder actuele) registraties in dit register

Geen registraties gevonden.

In overige registers

Register	ID
NTR-new	NL3723
NTR-old	NTR3885
CCMO	NL42489.068.12
ISRCTN	ISRCTN wordt niet meer aangevraagd.
OMON	NL-OMON36991

Resultaten

Samenvatting resultaten

N/A